

PIPELINE REPLACEMENT FROM
KILAUEA TO ANINI

DRAFT
ENVIRONMENTAL ASSESSMENT

Prepared for:
COUNTY OF KAUAI
Department of Water

July 2011

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LIST OF ABBREVIATIONS

AC	Asbestos-Cement
ALISH	Agricultural Lands of Importance to the State of Hawaii
BMP	Best Management Practices
CIP	Capital Improvement Program
COE	United States Army Corps of Engineers
CRP	Capital Rehabilitation Program
CRPL	Capital Replacement Program
CZM	Coastal Zone Management
DA	Department of the Army
DBEDT	State of Hawaii, Department of Business, Economic Development, and Tourism
DFW	State of Hawaii, Department of Land and Natural Resources, Division of Forestry & Wildlife
DLNR	State of Hawaii, Department of Land and Natural Resources
DOH	State of Hawaii, Department of Health
DOT	State of Hawaii, Department of Transportation
DOW	County of Kauai, Department of Water
DWSRF	Drinking Water State Revolving Fund
EPA	Environmental Protection Agency
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FPPA	Farmland Protection Policy Act
GPM	Gallons Per Minute
HAR	Hawaii Administrative Rules
HDD	Horizontal Directional Drilling
HRS	Hawaii Revised Statutes
IRH	State of Hawaii, Department of Health, Indoor and Radiological Health Branch
KIUC	Kauai Island Utility Cooperative
LF	Linear Feet
MG	Million Gallons
MGD	Million Gallons per Day
MSL	Mean Sea Level
MUTCD	Manual of Uniform Traffic Control Devices
NOAA	National Ocean and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System

List of Abbreviations

NRCS	United States Department of Agriculture, National Resources Conservation Service
OCCL	State of Hawaii, Department of Land and Natural Resources, Office of Conservation and Coastal Lands
OSHA	Occupational Health and Safety Administration
PVC	Polyvinyl Chloride
ROW	Right-of-Way
SDWA	Safe Drinking Water Act
SHPD	State of Hawaii, Department of Land and Natural Resources, Historic Preservation District
U.S.	United States
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WP	Water Plan 2020, Department of Water
WS	Water System
WSS	Water System Standards, Department of Water

EXECUTIVE SUMMARY

Project Name:

Pipeline Replacement from Kilauea to Anini
Kilauea-Kalihiwai-Anini Water System
Kilauea, Kauai, Hawaii
Department of Water Job No. 10-01

Proposing/Approving Agency:

Department of Water
County of Kauai
4398 Pua Loke Street
Lihue, Kauai, Hawaii 96766

Consultant:

Fukunaga & Associates, Inc.
1357 Kapiolani Boulevard, Suite 1530
Honolulu, Oahu, Hawaii 96814

Project Summary:

The Department of Water proposes to construct a new transmission waterline from its Kilauea-Waipake-Kalihiwai Water System to provide water supply to current DOW customers. The transmission route will be located along Kuhio Highway, Kalihiwai Road, crossing underneath Kalihiwai Stream, and Anini Road. In addition to supplying customers directly along the transmission route, the waterline will also reconnect to waterlines along Kalamania Road, Kaohe Road, and Kalihiwai Valley Road. The purpose of the project is twofold. Firstly, it will provide fire flow protection to several locations along the transmission route, which the current waterlines are not capable of doing. Secondly, it will replace the water supply to current DOW customers along Anini Road and Kalihiwai Valley Road, which is currently provided by another water purveyor (Princeville Utilities) through financial agreements with DOW, thereby providing greater system security by affording DOW complete control over the water system.

The project area is located within Urban, Agricultural, and Conservation State land use areas; and within unclassified, Open, Light Industrial, and Agricultural County zoning designations. The waterline alignment will be located entirely within State and County roadway Right-of-Ways. Part of the project area will be located within the Special Management Area and within the Shoreline Setback. Coordination with the Kauai Planning Department for jurisdiction and permit requirements is already under way.

Horizontal Directional Drilling will be the methodology employed to cross underneath Kalihiwai River, which is considered a water of the United States and thus under the jurisdiction of the U.S. Army Corps of Engineers. Several mitigative measures will be taken to protect the water from undue pollution from construction activities, and these will be coordinated in depth during the Department of the Army permit process.

This project is on the Department of Health, Safe Drinking Water Branch priority list of projects eligible for Drinking Water State Revolving Fund (DWSRF) funding and could potentially receive Federal funds.

Determination:

A Finding of No Significant Impact (FONSI) is anticipated for this project.

CHAPTER 1. INTRODUCTION

1.1 Purpose for Environmental Assessment

The County of Kauai Department of Water proposes to construct a waterline to supply potable water from its Kilauea-Waipake-Kalihiwai Water System to customers along Anini Road and Kalihiwai Valley Road.

Pursuant to Hawaii Revised Statutes, Chapter 343, an environmental review is required because the proposed project involves the following triggers:

- Propose any use within a shoreline area (along Anini Road) as described in HRS, Section 205A-41
- Propose the use of State and County lands and the use of County funds
- Propose any use within lands classified as Conservation by the State Land Use Commission

1.2 Existing Facilities and Operations

The Kilauea-Waipake-Kalihiwai Water System is one of the Department of Water's largest systems by service area, extending approximately seven miles from the Waipake Subdivision at Kapuna Road in the east to the Kalihiwai River in the west (see **Figure 1-1**). Although Kilauea Town generates most of the water demand, expansive mixed agricultural and residential subdivisions account for a large part of the service area. The source for the water system is two deep wells (Kilauea Wells 1 and 2) approximately a mile-and-a-half from Kuhio Highway south of Kilauea Town. According to DOW records, the two wells produced 137.1 MG between July and December 2010, or an average daily demand of approximately 0.75 MGD. A 12-inch waterline from the wells to Kuhio Highway serves as the main transmission for the system. Booster pumps provide service to the Waipake Subdivision and to Kalihiholo Subdivision in the 566-foot and 637-foot pressure zones, respectively; however, the majority of the service area is located within the 466-foot pressure zone.

The 12-inch transmission line is connected to an 8-inch AC waterline, which is reduced to a 6-inch waterline which runs west along Kuhio Highway and reduces to a 3-inch PVC waterline west of Kalihiwai Road. This waterline provides service to customers along Kalihiwai Road via two transmission routes. 1) A 4-inch PVC waterline along Kalihiwai Road from Kuhio Highway to the hairpin bend and a 3-inch PVC waterline along Kaohe Road provide service to customers within the elevation ranges of 140 feet and 350 feet. Fire hydrants are connected to the 4-inch waterline along Kalihiwai Road. 2) A 1-1/2-inch PVC waterline through an undeveloped easement from Kuhio Highway to Kalihiwai Road and a 2-inch PVC waterline along Kalihiwai Road provides service to the customers at near sea level elevations along Kalihiwai Road on the east side of Kalihiwai River. The latter transmission route also formerly provided service to customers on the west side of Kalihiwai River along Kalihiwai Valley Road; however, this

connection was previously destroyed during a flood along with the Kalihiwai Road Bridge crossing the river.

Currently, to provide service to these customers on the west side of Kalihiwai River, DOW purchases water supply from the private owners of a 4-inch waterline through an easement, and these owners in turn purchase water supply from the Princeville Water System. The private waterline is connected to a 4-inch Princeville waterline at Kalihiwai Road at one end and to the DOW waterline and metered at the east end of Kalihiwai Valley Road at the other end.

The Anini Water System is one of DOW's smallest systems in terms of water consumption. According to DOW customer service records, there are 63 metered users, which include Kalihikai Park, a polo field, and residences along Anini Road. The service area extends from Anini Stream eastward approximately two miles along Anini Road. DOW purchases water supply directly from the Princeville Water System and services its customers with a 4-inch PVC waterline along Anini Road. The waterline begins at the 8-inch Princeville waterline at the end of Wyllie Road, runs through an undeveloped easement, crosses under Anini Stream, and then follows along Anini Road eastward to its terminus.

1.3 Project Need and Objective

Many of the waterlines within the project area are ageing. The 4-inch PVC waterline along Anini Road was installed in the late 1970's. Some of the waterlines within the Kalihiwai area pre-date the interconnection of the Kalihiwai Water System with the former Kilauea Sugar Plantation Company's water system and expansion into the Waipake area, which began in the early 1970's. The age of these waterlines is potentially near or exceeding expected service life, which warrants replacement.

Several waterlines have limited or no capability to provide fire protection (see **Figure 1-2**). These are summarized below:

- 4-inch waterline along Kalihiwai Road from Kuhio Highway to the hairpin bend: Fire hydrants are connected to the waterline; however the fire flow capability is limited by the size of the waterline.
- 2-inch waterline along Kalihiwai Road adjacent to the east side of the river: Waterline is undersized and has no fire fighting capability.
- 4-inch waterline along Anini Road: Standpipes are connected to the waterline, which are not appropriate for fire protection. Additionally, fire flow capacity at the east end of the waterline is deficient.

As described in Section 1.2, the 2-inch waterline along Kalihiwai Valley Road and the 4-inch waterline along Anini Road are directly, or indirectly, supplied by the Princeville Water System (see **Figure 1-1**). It is not preferable for DOW customers to be reliant on another entity's water supply, because DOW does not have control over the operation of the water system nor the water quality. Furthermore, the cost of purchasing the water from the other purveyors likely exceeds the incremental increase in operation and maintenance costs from the additional demand on the



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FIGURE 1-1: Existing Water System



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FIGURE 1-2: Existing Deficient Waterlines

DOW water system. Over time, the capital costs of the proposed project will be justified by the cost savings to DOW from providing those customers with water supply from the DOW system rather than continuing to purchase water supply. The customers serviced by these two waterlines are already DOW customers, pay the same rates as other DOW customers, and will continue to do so; therefore, there is no direct cost impact on these customers.

The project objectives therefore are to provide water supply from the Kilauea-Waipake-Kalihiwai system to the DOW customers along Anini Road and Kalihiwai Valley Road, which will eliminate the need to purchase water supply from the Princeville Water System and the owners of the private waterline; and to provide adequate fire protection to the aforementioned areas and the service area along Kalihiwai Road on the east side of Kalihiwai River.

1.4 Project Description

The proposed waterline will connect to the Kilauea-Waipake-Kalihiwai Water System at the 12-inch transmission main at Kuhio Highway. The waterline will be constructed in two phases entirely within County and State Right-of-Ways along the following alignment (see **Figure 1-3**):

Phase 1: From the existing 12-inch transmission main at Kuhio Highway near Pukalani Place, running west along Kuhio Highway to Kalihiwai Road, along Kalihiwai Road to Kalihiwai Stream, crossing Kalihiwai Stream, along Kalihiwai Road from Kalihiwai Stream to Anini Road, along Anini Road to the east terminus of the existing 4-inch PVC waterline.

Phase 2: From the east terminus of the existing 4-inch PVC waterline, running west along Anini Road and terminating after the last service connection on the east side of Anini Stream.

Wherever feasible, the proposed waterline alignment will be located off of the existing roadway to minimize traffic disruption and reduce material costs. However, in locations where there is a significant slope off the side of the roadway or the roadway is abutting the shoreline, the proposed waterline alignment will be located within the paved roadway where feasible to provide additional protection from erosion.

The proposed waterline will provide service to DOW customers within the project area. The waterline will provide direct service connections to customers along the project alignment and will therefore replace the following waterlines:

- 6-inch Asbestos-Cement (AC) waterline along Kuhio Highway from the existing 12-inch transmission main to Kalihiwai Road
- 4-inch PVC waterline along Kalihiwai Road from the 6" AC waterline at Kuhio Highway to the hairpin bend in Kalihiwai Road
- 2-inch waterline along Kalihiwai Road adjacent to the east side of the river
- 4-inch PVC waterline along Anini Road from the east side of Anini Stream to its terminus approximately two miles east (currently connected to the Princeville Water System)

Those waterlines will be abandoned in place or removed and disposed, depending on the requirements of the agency with jurisdiction over the ROW. The proposed waterline will also reconnect to the following existing waterlines:

- 8-inch AC waterline along Kalamania Road at Kuhio Highway (currently connected to the 8-inch and 6-inch AC waterline along Kuhio Highway)
- 3-inch PVC waterline along Kaohe Road at Kalihiwai Road (currently connected to the 4-inch PVC waterline along Kalihiwai Road)
- 2-inch waterline along Kalihiwai Valley Road (currently connected to the private 4-inch waterline through an easement supplied by the Princeville Water System)

Once the proposed waterline is in service, the existing connections to the Princeville Water System and the private waterline will need to be terminated. This will require coordination with Princeville Utilities Company and the owners of the private waterline.

The proposed waterline will be designed for Maximum Day plus Fire Flow, Peak Hour, and Static hydraulic conditions. Demand calculations for these conditions were based on the DOW Water System Standards (WSS), and a fire flow requirement of 1,000 GPM was determined based on the WSS in addition to guidelines in the Fire Protection Handbook, 16th edition. Hydraulic calculations determined that the fire flow requirement will govern, and that a 12-inch diameter waterline will be required to convey the design flows. The waterline diameter may be reduced to 8-inch nearing the west end of the waterline along Anini Road.

It is anticipated that the proposed waterline material will be a combination of Ductile Iron Pipe, Class 52, and Polyvinyl Chloride, C-900. PVC will be utilized in the low-lying areas subject to corrosion. The methodology of installation will likely be traditional open trench excavation to install the waterline underground. Crossing of bridges and culverts could potentially be completed above-ground, depending on the requirements of the agency with jurisdiction over the ROW. Crossing of the Kalihiwai River will be accomplished by Horizontal Directional Drilling (HDD) underneath the river. See **Figure 1-4** for a typical HDD setup and methodology.

HDD methods for the construction of pipelines involve using sophisticated drilling techniques to drill a pilot hole, which is subsequently enlarged with various reaming tools to obtain a hole of the desired size. Drilling mud is used to flush the cuttings from the hole, and to stabilize the hole where possible so it does not cave in. When the hole has reached the required size, the pipeline (or a casing) is pulled back into the hole in a single operation. Typically, the drill profile has at least two vertical curves (due to entry and exit point requirements). Straight horizontal alignments are generally preferred, though the drill alignment can also accommodate horizontal curves if planned, designed and installed by qualified personnel.

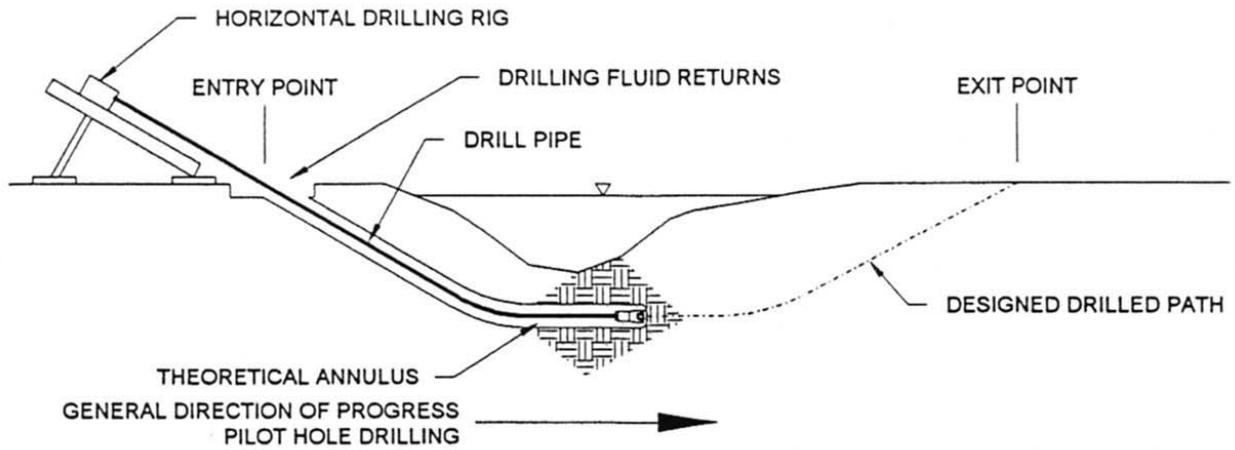
The drill bit is carefully tracked during pilot hole drilling in order to steer the hole to the desired line and grade. Usually in-hole tracking tools and tracking instruments positioned on the ground surface are used to monitor the location of the drill bit. The location of the pilot hole is monitored during drilling by taking periodic readings of the inclination and azimuth of the leading end of the drill string. Readings are taken with an instrument, inserted through the drill



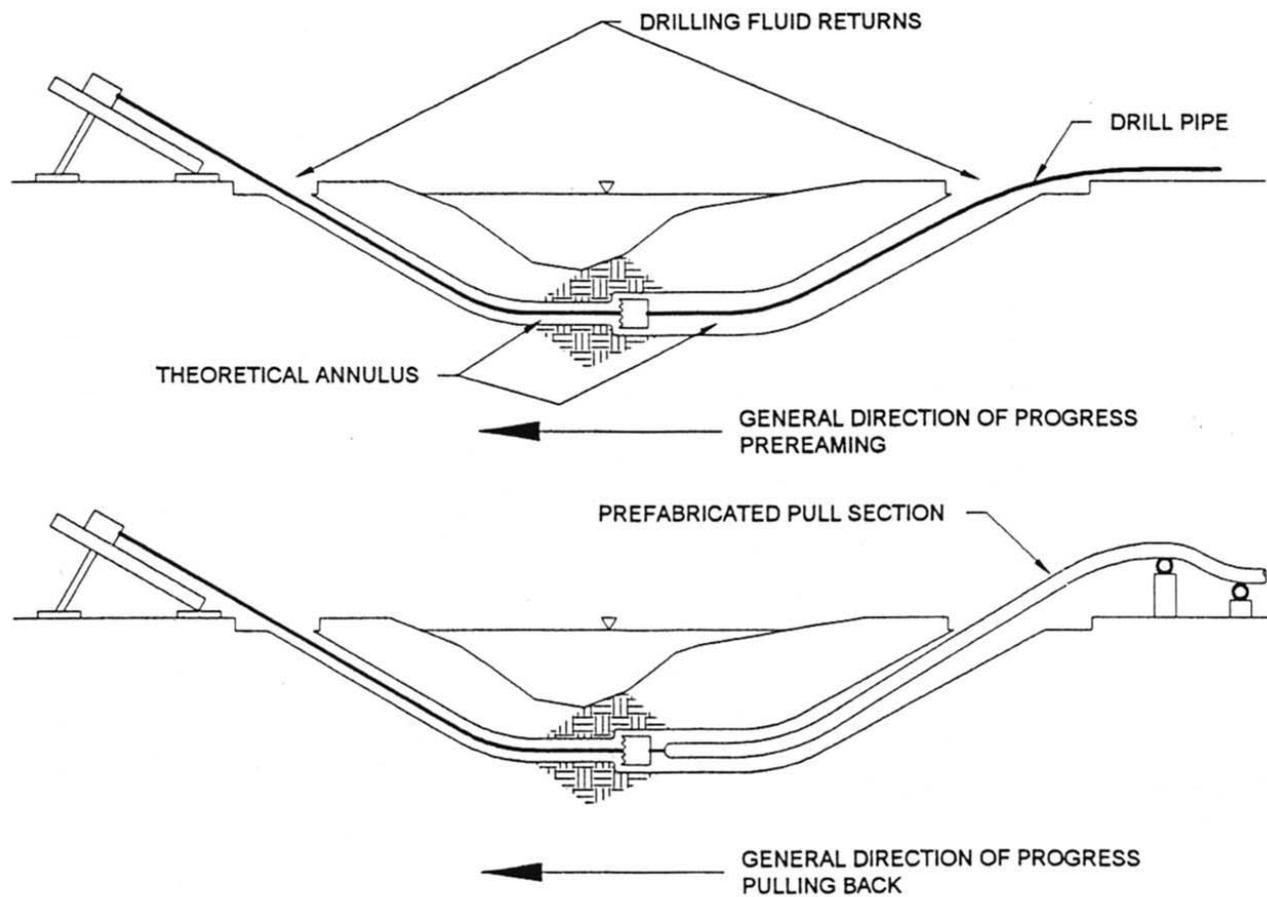
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FIGURE 1-3: Proposed Waterline

STAGE 1, PILOT HOLE DIRECTIONAL DRILLING



STAGE 2, REAMING & PULLING BACK



THE HDD METHOD



string as close as possible to the drill bit. The readings, in conjunction with measurements of the distance drilled since the last survey, are used to calculate the horizontal and vertical coordinates, and the elevation of the drill bit.

1.5 Construction Schedule and Cost

A preliminary construction cost estimate was prepared by Fukunaga & Associates, which estimated a cost of \$13.4 million, excluding design and contract administration fees. The project is on the DOH Safe Drinking Water Branch priority list of projects eligible for Drinking Water State Revolving Fund (DWSRF) funding and therefore could potentially receive Federal and/or County funds.

It is anticipated that the design will be complete before the end of 2011 and Phase 1 of the project will be put out for bid immediately. Construction of both phases is expected to be completed within two years of award.

CHAPTER 2. DESCRIPTION OF THE ENVIRONMENT, IMPACTS AND MITIGATIVE MEASURES

2.1 Climate

The climate of Kauai is characterized by mild temperatures with little seasonal and diurnal variability. Average monthly temperatures in Kilauea Town range between 67.1 degrees F and 79.8 degrees F. The average annual precipitation is 68 inches, predominantly falling between the months of October and April. Northeasterly trade winds prevail during the greater part of the year.

2.2 Topography

The island of Kauai was formed by two major volcanic series, the Waimea Canyon and the Koloa, with the former being the older of the two. At approximately 5 million years in age, it is one of the oldest of the Hawaiian Islands. However, due to its age, there are no longer active volcanoes. Landslides may have also helped shape the island. Kauai is also susceptible to erosion.

The topography throughout the project area varies significantly. The section along Kuhio Highway is sloped mildly with elevations ranging from 320 to 250 feet from Kilauea Town westward, although approaching Kalihiwai Road the ROW was cut to construct the roadway and therefore slopes significantly upward on either side of the road. The Kalihiwai Road and easternmost Anini Road sections are winding and marked by significant grade changes, dropping from elevations of 250 feet at Kuhio Highway, to near sea level in the vicinity of Kalihiwai River, and back up to 140 feet at the Kalihiwai Road/Anini Road intersection. The roadway ROW is situated in heavily vegetated valleys and was constructed in sections of both cut and fill, often sloping significantly off of the side of the paved roadway. The majority of Anini Road is along the coast, with elevations varying from 7 to 30 feet. The roadway was constructed essentially traversing the cliff, and the grade slopes steeply, sometimes near vertical, off of either side of the roadway. In several locations, the shoreline is at the base of the cliff on the downward slope side off of the roadway. The section of Anini Road adjacent to Kalihikai Park is flat, straight, and relatively open. The west end of Anini Road adjacent to Anini Beach is a few feet above sea level and is abutting the shoreline.

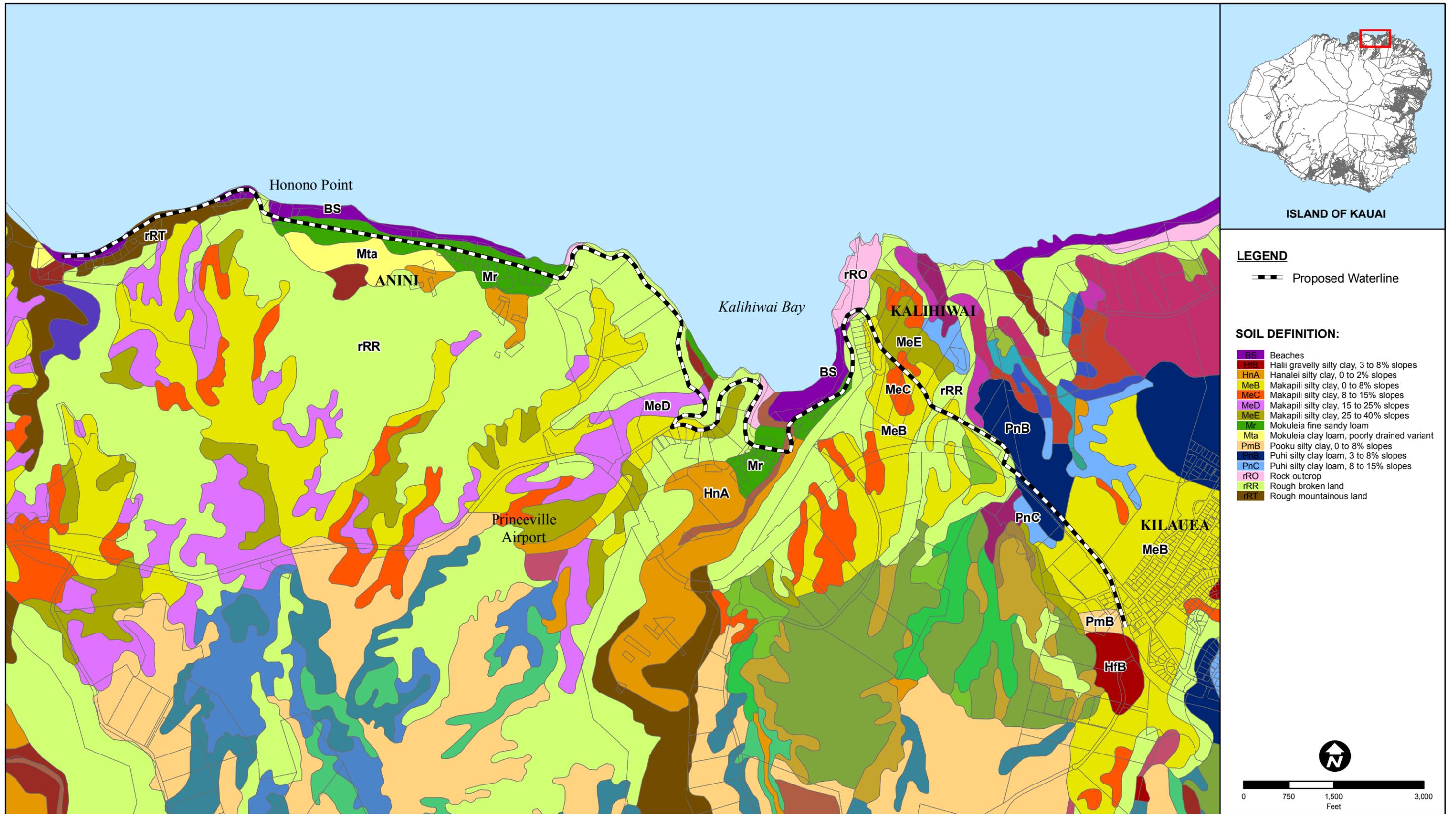
2.3 Soils

2.3.1 Soil Survey

The USDA, Soil Conservation Service 1972 “Soil Survey” provides detailed information on soil classifications, characteristics and maps showing their locations on the islands. The survey is useful for engineers and builders because the information includes descriptions of soil properties and the relative stability of soils for engineering purposes. According to the survey, several

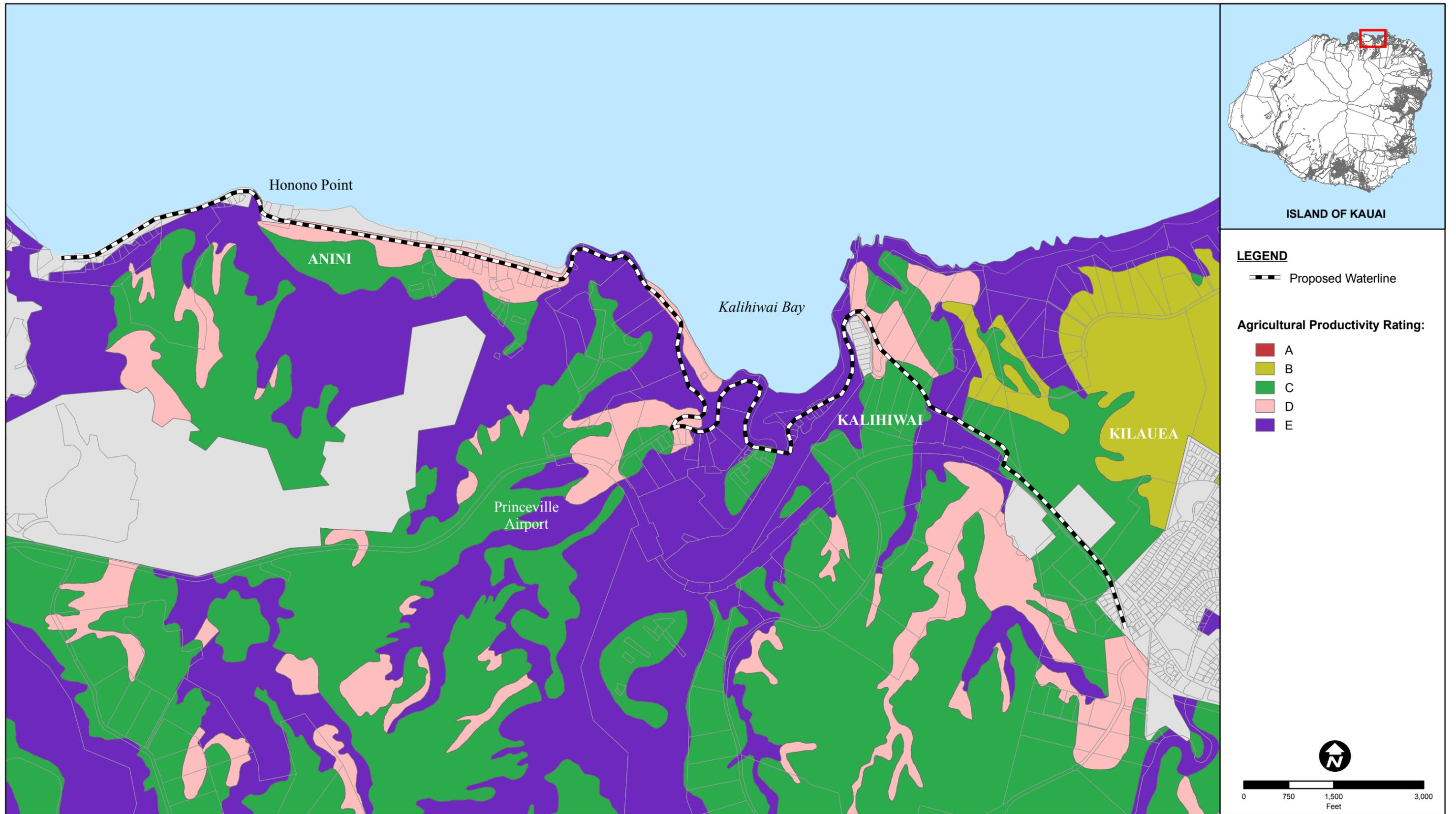
different soil types are found within the project area as described below. **Figure 2-1** shows the locations of these soils.

- Beaches (BS): Beaches occur as sandy, gravelly, or cobbly areas and include light-colored sands derived from coral and seashells.
- Halii gravelly silty clay, 3 to 8% slopes (HfB): This soil occurs on ridgetops and side slopes on uplands. A representative profile consists of a 6-inch surface layer of very dark grayish-brown gravelly silty clay, an upper part of subsoil consisting of a dark reddish-brown and strong brown silty clay and clay loam that has a sub-angular blocky structure, a lower part of subsoil consisting of bands of red clay loam to a depth of 60 inches, and a soft weathered rock substratum. The soil properties are very strongly to extremely acidic, moderately rapid permeability, slow runoff, and slight erosion hazard. It is used for sugarcane, wildlife habitat and water supply.
- Makapili silty clay, various slopes (MeA through MeE): This soil is located on broad upland ridges. A representative profile consists of a 12-inch brown silty clay surface layer, a 48-inch thick subsoil consisting of reddish-brown and dark reddish-brown and yellowish-red clay loam and silty clay that has sub-angular blocky structure, and silty clay substratum. The soil properties are strongly acidic and moderately rapid permeability. Runoff is slow to rapid, and erosion hazard is slight to moderate, increasing with slope. These soils are used for pasture and/or sugarcane.
- Mokuleia clay loam (Mta): This soil occurs as small areas on coastal plains. It is nearly level. A representative profile consists of a 16-inch thick very dark grayish-brown clay loam surface layer which is neutral in reaction and moderately permeable, and 34 to 48-inch thick dark-brown and light-gray single-grain and loamy sand next layer which is moderately alkaline and rapidly permeable. Runoff is slow and erosion hazard is no more than slight. It is used for sugarcane, truck crops and pasture.
- Mokuleia fine sandy loam (Mr): This soil occurs on northern and eastern coastal plains of Kauai and has a profile like that of Mokuleia clay loam, except for the texture of the surface layer. Runoff is very slow and erosion hazard is slight. It is nearly level and used for pasture.
- Pooku silty clay, 0 to 8% slopes (PmB): This soil is on the tops of broad interfluves in the uplands. A representative profile consists of a 14-inch thick brown silty clay surface layer, and a 48-inch thick dark-red and dark reddish-brown silty clay subsoil layer that has sub-angular blocky structure. The soil is strongly acidic and extremely acidic. Permeability is moderately rapid, runoff is slow, and erosion hazard is no more than slight. This soil is used for pasture, sugarcane, wildlife habitat, woodland and water supply.
- Puhi silty clay loam, 3 to 8% and 8 to 15% slopes (PnB and PnC): This soil is on broad interfluves on the uplands. A representative profile consists of a 12-inch thick brown silty clay loam, a 48-inch thick subsoil consisting of reddish-brown and dark reddish-brown silty clay loam and silty clay that has a sub-angular blocky structure, and a silty clay substratum. The surface layer is very strongly acidic and the subsoil is slightly acidic to medium acidic. Permeability is moderately rapid, runoff is slow and erosion



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FIGURE 2-1: USGS Soils Map



hazard is slight. It is used for sugarcane, pineapple, pasture, orchards. PnB is also used for truck crops and homesites.

- Rock outcrop (rRO): Rock outcrop consists of areas at elevations from nearly sea level to 10,000 feet where bedrock covers more than 90% of the surface, consisting of mainly basalt and andesite. Lands are gently sloping to precipitous. It is not suited to farming, but is used for water supply, wildlife habitat and recreation.
- Rough broken land (rRR): Rough broken land consists of very steep land at 40 to 70 percent slope, broken by numerous drainage channels, at elevations from sea level to 8,000 feet. It occurs at gulches and on mountainsides. In most places it is not stony; soils are variable, 20 to 60 inches deep over soft, weathered rock, which in most places are mixed with the soil material. Small areas of outcrop, stones and soil slips are common. It is primarily used for watershed and wildlife habitat, but in places is also used for pasture and woodland.

2.3.2 Land Study Bureau

The University of Hawaii, Land Study Bureau “Detailed Land Classification – Island of Kauai” grouped all non-urban lands into five categories based on their soil properties and capabilities for agricultural productivity measured by their performance for selected crops. The categories were assigned letters “A” through “E” in order of highest to least productive. The majority of the project area is within categories “D” and “E”, with small pockets along Kuhio Highway and Kalihiwai Road within category “C”. See **Figure 2-2**.

2.3.3 Agricultural Lands of Importance to the State of Hawaii

The Department of Agriculture “Agricultural Lands of Importance to the State of Hawaii” (ALISH) provided a classification system for identification of agriculturally important lands to the State, which established three classes of agricultural lands primarily, but not exclusively, on the basis of soil characteristics. These classifications provide decision makers understanding of long-term implications of several land use options for production of food, feed, forage, and fiber crops, however, do not designate areas to any specific land use. The project area is within “Prime” and “Other” classifications. “Prime” agricultural lands have the soil quality, growing season, and moisture supply to produce sustained high yield crops when treated and managed with modern farming methods. “Other” agricultural lands are important to agriculture in Hawaii, but exhibit properties, such as seasonal wetness, limited rooting zone, slope, flooding, or susceptibility to erosion or drought, that exclude them from the other two categories.

The project will be located within existing ROW’s that are already owned and occupied by the State and County and will not affect negatively affect the agricultural or other use of adjacent properties. See **Figure 2-3**.

2.4 Natural Hazards

The coastal areas of the project are subject to several natural hazards, including flooding, tsunami and erosion.

As shown on **Figure 2-4**, the project area along Anini Road are within flood zone VE according to the Flood Insurance Rate Map (FIRM) issued by the Federal Emergency Management Agency (FEMA). Flood zone VE is described as being within the 100-year coastal floodplains that have additional hazards associated with storm waves. The determined base flood elevations range between 9 and 16 feet above mean sea level. The area in the vicinity of the crossing of Kalihiwai River is within flood zone AE, which is described as being within the 100-year floodplains. The determined base flood elevation is 16 feet above sea level. The project areas along Kalihiwai Road and Kuhio Highway are within flood zone X, which is described as areas outside the 0.2 percent chance floodplain. The significance of the return period for a 100-year flood is that on average a flood of that magnitude occurs once every hundred years; however, this is greater than the expected service life of a watermain. Nearly all of the waterline will be installed underground where the risk of damage from flood or tsunami is minimized. If the waterline is installed above ground at bridge or culvert crossings, risk of flood and tsunami damage can be reduced by providing additional structural safeguards, such as stronger pipe, structural fastening, and corrosion-resistant coating.

Erosion is a potential hazard along the sections of Anini Road and Kalihiwai Road where steep downward slopes exist off of the side of the roadway. To reduce the potential effects of long-term erosion, the waterline will be constructed within the paved roadway or on the upward slope side where feasible. It is not expected that installation of the waterline will lead to undue erosion, because construction vehicles will be limited to the paved roadway away from the steeply sloped areas.

2.5 Hydrology

The Commission on Water Resource Management has established hydrologic units for both groundwater and surface water resources. Groundwater is described in the State Water Code as: “any water found beneath the surface of the earth, whether in perched supply, dike-confined, flowing, or percolating in underground channels or streams, under artesian pressure or not, or otherwise”. Surface water is defined as: “both contained surface water—that is, water upon the surface of the earth in bounds created naturally or artificially including, but not limited to, streams, other watercourses, lakes, reservoirs, and coastal waters subject to state jurisdiction—and diffused surface water—that is, water occurring upon the surface of the ground other than in contained water bodies. Water from natural springs is surface water when it exits from the spring onto the earth’s surface”.

Groundwater hydrologic units have been delineated by Aquifer Sector Areas which are further subdivided into Aquifer System Areas. The project lies within the Kalihiwai Aquifer System Area, which is part of the Hanalei Aquifer Sector Area; however, the two groundwater wells which supply the Kilauea-Waipake-Kalihiwai Water System are located within the adjoining Kilauea Aquifer System Area, which is part of the Lihue Aquifer Sector Area. The Sustainable Yield for the Kilauea Aquifer System Area is 5 MGD. The anticipated additional demand from the project is 0.087 MGD, which is not expected to appreciably affect the aquifer.





Surface water hydrologic units are divided by watershed units which are comprised of one or more drainage basins. The project spans six surface water hydrologic units, Anini [2021], Kalihikai West [2022], Kalihikai Center [2023], Kalihikai East [2024], Kalihiwai [2025] and Puukumu [2026]. According to the Hawaii Stream Assessment, the Kalihiwai River is the only perennial stream within the project limits. The waterline will be installed well beneath the streambed; therefore, stream flow will not be affected by this project.

2.6 Flora and Fauna

The United States Fish and Wildlife Service (USFWS) and the DLNR, Division of Forestry and Wildlife (DFW), were contacted for assistance in identifying species within the project area. Both agencies provided information by letter, which are included in Appendix B

Threatened and endangered terrestrial species known to the area are described below:

- Water birds of the Kalihiwai River include the Hawaiian moorhen or Alae ula (*Gallinula chloropus sandvicensis*), Hawaiian coot or Alae keo keo (*Fulica alai*), Hawaiian duck or Koloa molai (*Anas wyvilliana*), and Hawaiian stilt or Ae'o (*Himantopus mexicanus knudseni*). DFW has not observed nesting birds in the vicinity of where the Kalihiwai River crossing is planned.
- Nocturnal species known to transverse over the Kalihiwai River area at night include Newell's shearwater or A'o (*Puffinus newelli*), Hawaiian petrel or U'au (*Pterodroma sandwichensis*) and Band-rumped storm petrel (*Oceanodroma castro*). These species are attracted to bright lights and have collided with tall artificially lit man-made structures.
- The Hawaiian hoary bat (*Lasiurus cinereus semotus*) is known to roost in both exotic and native trees and tall shrubs and leave their young unattended while foraging at night.
- The Hawaiian goose (*Branta sandvicensis*) has been observed in areas throughout the project area. This species breed from November through April and could be in the vicinity of the proposed project.

Nearly all of the proposed project will be constructed within or alongside roadways where impacts on native flora and fauna will be minimal. The entry and exit pits for the Kalihiwai River crossing will also be located within the remnants of a roadway right-of-way. However, due to the sensitive location, it is expected that flora and fauna surveys will be conducted in the vicinity of the Kalihiwai River crossing as part of the permitting process with the Army Corps of Engineers. See Section 3.8 for additional details. Mitigative measures to protect the species listed above include:

- Woody plants greater than 15 feet in height should not be trimmed between May 15 and August 15.
- Night-time work should be avoided.

2.7 Tides and Currents

The nearest National Ocean and Atmospheric Administration (NOAA) measuring station is Nawiliwili Harbor in Lihue, approximately 30 miles from the project location. The Mean Lower Low Water level is 0.82 feet below MSL and the Mean Higher High Water level is 1.01 feet above MSL.

2.8 Water Quality

According to the Department of Health, Water Quality Standards Map, the coastal waters near Anini Road are designated as Class “A” and the inland waters of Kalihiwai River are designated as Class “2”. The objective of Class “A” waters is “that their use for recreational purposes and aesthetic enjoyment be protected”, and the objective of Class “2” waters is “to protect their use for recreational purposes, propagation of aquatic life, agricultural and industrial water supplies, shipping and navigation”. Both classes shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established.

A National Pollution Discharge Elimination System (NPDES) Permit will be required for the construction of the waterline, because the disturbed area will be greater than one acre. As part of the permit requirements, Best Management Practices (BMP) will be incorporated which will control the discharge of stormwater runoff and effluent resulting from construction activities. The BMP’s will be shown and described on the design plans for the waterline.

If HDD is utilized to complete the crossing of Kalihiwai River, several measures can be taken to minimize water quality impacts. The entry and exit pits are typically shallow, 1 to 4 feet deep, and are used for temporary containment of the drill spoils and fluids before being pumped out into a tanker truck. These would be located where practicable at an elevation sufficient to keep work above the groundwater table. Wet slurry would be pumped to tanks or surface containment pits to be dried out prior to transport.

Spoils resulting from HDD operations are typically very wet. A temporary spoil stockpiling and dewatering area would be needed to allow spoils to be separated from the drilling fluids and for processing, stockpiling, and handling prior to disposal. The dewatering basin would include a lined spoil containment area with a plastic liner to prevent infiltration of the drilling fluids into the ground. If there is adequate staging area at the entry and exit pits, the Contractor can be allowed to temporarily stockpile spoils and cuttings and stage their dewatering area onsite. However, if the staging area is limited because of site constraints, then the spoil stockpiling would be limited and the dewatering area will need to be staged off-site.

Potential for inadvertent mud returns, ground heave, or ground subsidence would be highest where the ground cover is less than 15 feet, such as near entry and exit pits, and where the HDD drill path penetrates near existing utility trench backfills. Careful monitoring of mud pressures and returns would be required. In the event of inadvertent mud returns, ground heave, or ground subsidence, directional drilling would be temporarily suspended, and the Contractor should make the necessary adjustments in their drilling mud program and drilling methods, including but not limited to using a thicker drill mud and decreasing mud pressures to the drill bit. Additional

BMP's to minimize potential inadvertent mud returns typically include a "conductor casing" being inserted at the entry and/or exit location to protect the drill hole. This casing is typically driven in by pile driving hammer or drilled in using the drill rig. Other BMP's include silt fences and/or containment devices such as straw waddles and sandbags placed around the work area, and dust fences and dust suppression with a water source.

2.9 Hazardous Materials

The existing 8" and 6" Asbestos-Cement waterline along Kuhio Highway from the existing 12-inch transmission main to Kalihiwai Road will become obsolete once the project is complete. The Department of Transportation, Highways Division, prohibits utilities from being abandoned in-place within its Right-of-Ways; therefore, it is likely that part, or all, of the existing AC waterline will need to be removed and disposed.

Asbestos-Cement or "Transite" pipe only poses a threat once it becomes friable; therefore, great care must be exercised when removing and disposing of the pipe. According to the Department of Health, Indoor and Radiological Health (IRH) Branch, AC pipe is classified as "restricted" or "special" and not hazardous waste. Removal and disposal of the pipe would need to conform to HAR, Title 11, Chapter 501, and all applicable OSHA regulations. Once out of service, the existing AC waterline may be removed by open trenching by a C-19 licensed Asbestos contractor. The waterline would need to be exposed by hand, manually strapped, and then pulled apart at the joints without breaking the pipe. Each pipe would need to be wrapped leak tight with 6 mm plastic bags and labeled. Any broken pipe and fragments would also need to be bagged. The pipe may be disposed at an accepting landfill. At the time of this Draft Environmental Assessment, the Kekaha Landfill was no longer accepting AC pipe.

2.10 Air Quality

The DOH Clean Air Branch monitors ambient air for several air pollutants at 13 monitoring stations throughout Oahu, Big Island and Maui; however, there are no monitoring stations on Kauai. Air quality in the vicinity of the project is typically very good; the existing sources of air pollution are emissions from motor vehicles traveling on the various roadways. Short term impacts during the construction period may arise from construction activity. Emissions from construction vehicles may slightly increase air pollution; however, these will likely be dispersed by the prevailing trade winds. Fugitive dust arising from trenching activities and construction vehicles may be controlled using dewatering trucks and by covering stockpiles of excavated material. Normal operation of the waterline is not expected to have any impact on air quality.

2.11 Noise

The two predominant existing sources of noise within the project area are vehicular traffic within the section along Kuhio Highway, and ocean waves within the section along Anini Road. HAR Title 11, Chapter 46 describes the regulations for community noise control and sets forth maximum noise tolerances by zoning district, which are to be administered by DOH, IRH. Noise from construction activities will be short-term and localized, but will likely exceed these tolerances. An approved Community Noise Permit will be required for construction during the

hours of 7:00 am and 6:00 pm Monday through Friday, and 9:00 am through 6:00 pm Saturdays. Construction outside of these hours will require an approved Community Noise Variance. These permits will be the responsibility of the construction contractor.

2.12 Archaeological and Cultural Resources

The State Historic Preservation District maintains the Hawaii Register of Historic Places, which are recognized as districts, sites, structures, buildings and objects and their significance in Hawaii's history, architecture, archaeology, engineering and culture. The National Park Service maintains the National Register of Historic Places, which includes significant properties nominated by State and Federal agencies, historic areas in the National Park System and all National Historic Landmarks. A review of the National and State Register of Historic Places on the SHPD website revealed that there are no historic places within the project area.

The proposed waterline will be constructed within existing roadway ROW's which have previously been disturbed. In the unlikely event that historical or cultural resources are encountered during construction, work will be halted in the immediate area of the discovery and SHPD will be contacted as outlined in HRS Chapter 6E. DOW will consider archaeological monitoring during construction of the Kalihiwai River crossing.

2.13 Socio-Economic Characteristics

According to the U.S. Census Bureau, the population, percent non-Caucasian, and median household income of the communities within the project area are as follows:

Table 2-1: Selected Socio-Economic Data

Census Designated Place	Population¹	% Minorities¹	Median Household Income²
Kalihiwai	428	32.2	\$42,083
Kilauea	2,158	45.1	\$41,312
Princeville	2,342	19.6	\$63,833

¹Source: U.S. Census Bureau, 2010 Census Redistricting Data (Public Law 94-171) Summary, extracted by DBEDT, Hawaii State Data Center

²Source: U.S. Census Bureau, 2000 Census

In 2009, the University of Hawaii, Economic Research Organization, prepared a report entitled "Kauai Economic Outlook Summary" for the County of Kauai. The key findings of the study were as follows:

- Visitor industry experienced a significant downturn and was not expected to begin recovery until 2010.
- Construction cycle began to turn down hard and was expected to decline for several years, bottoming out in 2011-12.
- Job losses would be widespread over the following year.

- Inflation-adjusted personal income would decline marginally and begin recovery in 2011.

The proposed project is not expected to have any long-term economic impacts; however, it will have minor positive short-term impacts associated with the construction of the waterline. These impacts include the creation of jobs for the anticipated 2-year duration of construction, assuming the project is awarded to a local contractor; and indirect economic stimulus from those workers spending their income on goods and services.

2.14 Utilities

Utilities within the project area are limited to electrical, telephone, cable television, and waterlines. Existing waterlines are described in detail in Section 1.2. Electrical service is provided by Kauai Island Utility Cooperative (KIUC), telephone service is provided by Hawaiian Telcom, and cable television service is provided by Oceanic Time Warner Cable. Service lines for the three utilities appear to be mostly aerial and are mounted on joint utility poles. Underground vaults for individual services for the three utilities are located close to the property line in isolated sections along Anini Road and Kalihiwai Road east of Kalihiwai River.

Several precautions will be taken to minimize the potential for conflicts with the existing utilities. Minimum clearances as required by the WSS will be followed when designing the waterline alignment and profile, and contractors will be required to coordinate with the utility companies to field tone their infrastructure prior to construction. In general, there is ample space within the ROW's to locate the proposed waterline and very few utilities; therefore, it is expected that impacts will be minimal.

The proposed waterline will require connection to the existing 12" waterline at Kuhio Highway, and to existing waterlines at three other locations. This will involve temporary shutoff of the existing waterline at the nearest line valve to the connection point while the fittings, pipe and appurtenances required to make the connection are installed. Although this process typically takes only a few hours, several customers will be without water for the duration. As a mitigating measure, contractors can inform the residents in advance of the impending water shutdown.

Individual service connections to existing waterlines along the proposed waterline alignment will be reconnected to the proposed waterline once in service. This process also requires temporary shutdown of the service connection and typically takes a few minutes to a half hour. Contractors can also inform the residents at the time of the reconnection.

2.15 Transportation

Kuhio Highway is a two-lane major arterial State road and the primary mode of transport between North Shore and Lihue. In addition to personal automobile traffic, it also provides transport for the Kauai Bus, which has a weekday route between Lihue and Hanalei. Installation of the waterline for majority of the section of the project within the Kuhio Highway ROW will likely be completed outside of the traveled way due to the width of the ROW. However, the waterline will need to completely cross Kuhio Highway at least once. To minimize traffic

disruption, construction will not be permitted within the traveled lanes during peak morning and afternoon hours, and all lanes will remain open during these times.

There are two intersections of Kalihiwai Road and Kuhio Highway, one on either side of Kalihiwai River. Each intersection is the only route to access either roadway, and both come to a dead-end at the river. Construction crews may occupy the entire narrow roadway, and because there is only one way in and out for residents and visitors, access will be impacted. However, traffic flow is minimal, and construction crews can make arrangements to provide residents throughfare on an as-needed basis.

Anini Road also has only one access, from Kalihiwai Road, and comes to a dead-end near Anini Stream. For the most part it is a two-lane divided road, but it narrows and becomes undivided east of Kalihikai Park, and it is not paved the easternmost 1,000 feet. Lane closures could have an appreciable impact, considering the number of residents and the visitors who use the two beaches along this section of roadway. Although these impacts cannot be avoided, mitigation can be provided by notifying the public well in advance of construction. This can be accomplished by mailing letters to the residents and posting notices in the local newspaper informing of the impending construction and expected lane closures.

Traffic control plans based on the Manual of Uniform Traffic Control Devices (MUTCD) will be developed during the design phase of the project which will provide details of signage and personnel required to facilitate lane closures. These plans will be reviewed by DOT, Highways Division and County of Kauai Public Works and will form part of the Contract Documents.

2.16 Police Protection

The nearest Kauai Police Department substation is located west of the project area in Hanalei. As discussed in Section 2.15, Anini Road, and Kalihiwai Road on either side of the river, can be accessed by one route only. All of these roadways are wide enough for only two lanes of traffic, and should lane closures be required, it is likely that only one lane will be available. The direction of traffic flow is typically alternated frequently; however, if there is substantial traffic flow, a queue of vehicles will form on the “closed” side.

Police vehicles may be disrupted in the event where there is a lane closure between an emergency and the access route. The disruption time to police vehicles can be reduced by utilizing flagmen to direct the flow of traffic. In the event of an approaching police vehicle, flagmen can stop traffic flow in the opposing direction and give the police vehicle exclusive passage through the construction zone ahead of the waiting queue.

2.17 Fire Protection

The nearest Kauai Fire Department station is located west of the project area in Hanalei. Fire trucks may also be disrupted by lane closures in the same manner as described in Section 2.16. Disruption time to fire trucks can also be reduced by utilizing flagmen.

Fire protection services will also be affected by shutdown of existing waterlines during reconnection to or replacement by the proposed waterline, which would render the fire hydrants unusable. The existing waterlines with fire hydrants which will be affected are the 4-inch waterline along Kalihiwai Road and the 8-inch waterline along Kalamania Road. The 4-inch waterline along Anini Road has fire hydrants but does not need to be reconnected to the proposed waterline and may remain in service until after the proposed waterline becomes fully operational. As discussed in Section 2.14, the duration of shutdown will likely be limited to a few hours. To mitigate the impacts, the contractor can notify the Fire Department in advance of the impending water shutdown.

2.18 Educational Facilities

There are two schools within the vicinity of the project. Kilauea Elementary School is located along Kolo Road in Kilauea Town and is less than 1,000 feet from the eastern limit of the project area. It is a public school administered by the Department of Education, Kauai District. Kauai Christian Academy is located just north of Kilauea Town on Kilauea Road and is a private school. Despite the proximity to the project area, it is not anticipated that the project will have any impact upon either school.

CHAPTER 3. RELATIONSHIP TO FEDERAL, STATE AND COUNTY PLANS AND POLICIES

3.1 Hawaii State Plan

The Hawaii State Plan, Chapter 226 of the Hawaii Revised Statutes, was first adopted in 1978. It serves as a guide for the future long-range development of the State through identification of goals, objectives, policies, and priorities. The objectives and policies relevant to the proposed project are described below:

§226-14 Objective and policies for facility systems—in general.

- (a) Planning for the State’s facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.
- (b) To achieve the general facility systems objective, it shall be the policy of this State to:
 - (1) Accommodate the needs of Hawaii’s people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.
 - (2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.
 - (3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.
 - (4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.

§226-16 Objective and policies for facility systems—water.

- (a) Planning for the State’s facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.
- (b) To achieve the facility systems water objective, it shall be the policy of this State to:
 - (1) Coordinate development of land use activities with existing and potential water supply.
 - (2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.
 - (3) Reclaim and encourage the productive use of runoff water and wastewater discharges.
 - (4) Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.
 - (5) Support water supply services to areas experiencing critical water problems.
 - (6) Promote water conservation programs and practices in government, private industry, and the general public to help ensure adequate water to meet long-term needs.

The proposed project is in compliance with the aforementioned goals and objectives.

3.2 State Land Use Law

Chapter 205 of the Hawaii Revised Statutes classified four major land use districts in which all lands are placed and established the Land Use Commission to determine the boundaries of these districts. The four land use districts are: Rural, Urban, Agricultural and Conservation. The project area is within the latter three districts. See **Figure 3-1**.

The Conservation District is regulated by the Department of Land and Natural Resources, Office of Conservation and Coastal Lands (OCCL), and is divided into five subzones: Protective, Limited, Resource, General and Special. The first four subzones are arranged in a hierarchy of environmental sensitivity, ranging from the most to the least sensitive; the Special subzone is applied in special cases specifically to allow a unique land use on a specific site.

In a letter dated March 23, 2011, OCCL indicated that portions of the project area appear to lie within the Conservation District, Limited and Resource subzones. The proposed work is an identified land use pursuant to HAR §135-5-22, “P-6 Public Purpose Uses”, which will require a permit, and where indicated, a management plan. Portions within State or County transportation ROW’s that lie within the Conservation district will also require approval by those agencies.

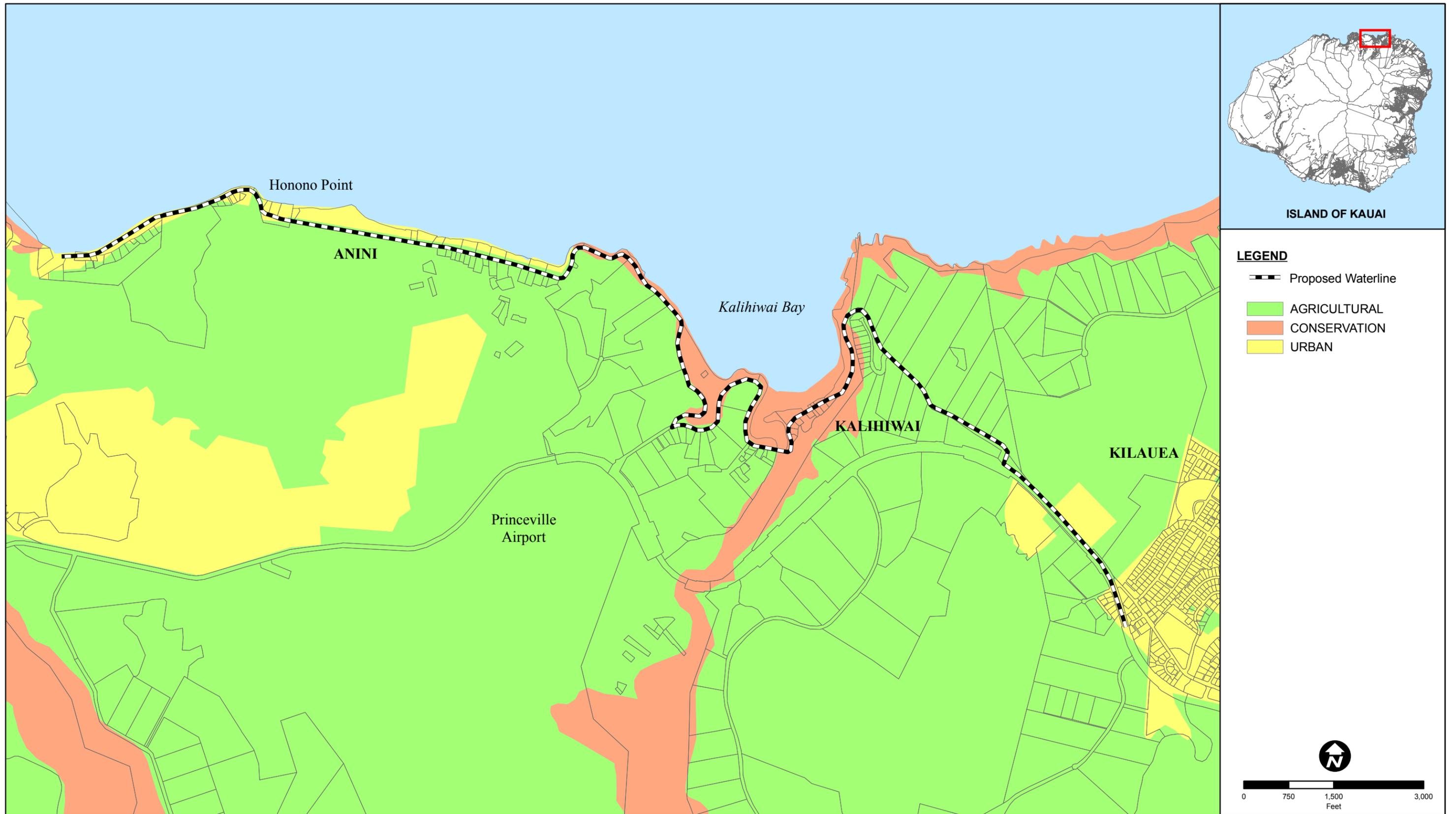
3.3 Kauai County General Plan

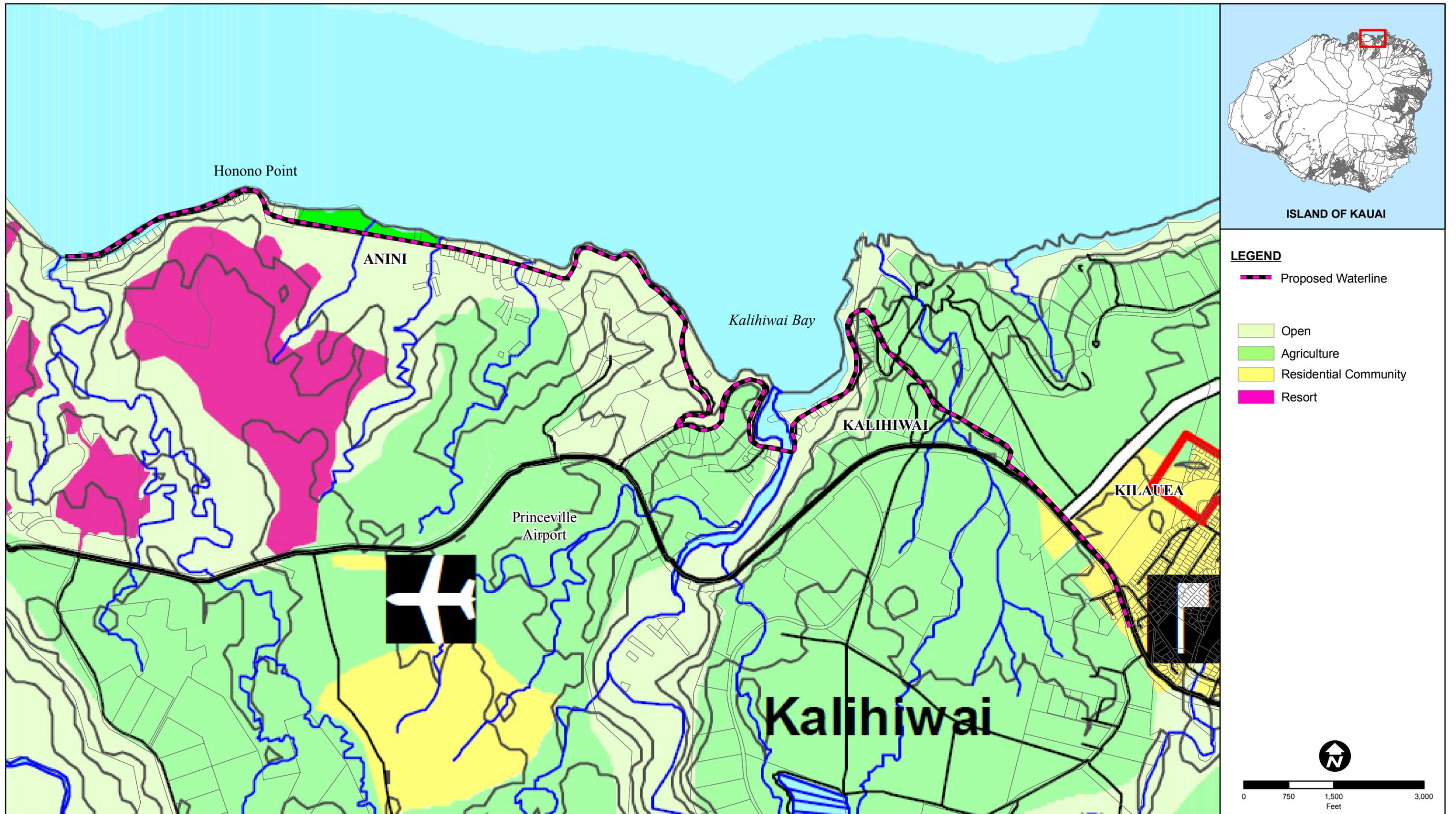
The County of Kauai General Plan is a document adopted through Ordinance by County Council that provides guidance through its policies for land use regulations, the location and character of new development and facilities, and planning for County and State facilities and services. The General plan was last adopted in 2000 and provides a 20-year planning vision.

The General Plan also contains Land Use maps which classify lands into ten designations. The project area is within Agriculture, Open, Residential Community and Park designations as shown in **Figure 3-2**. The policies for these designations deal primarily for the development of these types of lands. The proposed waterline will be installed entirely within County and State corridors that have already been developed and will be underground hence the use of land will not be altered.

The policies for Water Supply, Section 7.4.4., are as follows:

- (a) Develop a long-range plan to guide expansion, improvement, and rehabilitation of County water systems.
- (b) Coordinate planning of future water system development and rate structures with General Plan policies and guidelines.
- (c) Support compact development by giving priority to water supply improvements for existing and planned Urban Center, Residential Community, and Resort Areas, while also supporting development in already-established Agricultural Communities.





The proposed project is consistent with the aforementioned policies.

3.4 Water Plan 2020

The Water Plan 2020 (WP) was developed in 2001 and serves as the long-range plan and vision to guide DOW for future operations and to identify the required improvements to continue providing safe, affordable and reliable water service, while operating in a sustainable and financially secure manner. In order to achieve these goals, the Water Plan 2020 developed over a 20-year window a Capital Improvements (CIP), Capital Rehabilitation (CRP), and Capital Replacement (CRPL) Programs; a Financial Plan that examines DOW's financial conditions; and a Water Rate evaluation that developed the rates and fees required to support the implementation of the first five years of the plan.

The WP examined each of the DOW systems individually and determined and prioritized a list of improvements. Four waterline CRPL projects were proposed for the Kilauea-Waipake-Kalihiwai and Anini Water Systems which are within the project area and are depicted in **Figure 3-3**. These projects were assigned numbers and titles:

- WKK-4: Koahe Road / Kalihiwai Road 6-inch Main Replacement
- WKK-6: Kuhio Highway (Pukalani Place to Kalihiholo Road) Replacement
- Ani-1a: Anini and Kalihiwai Road 6-inch Main
- Ani-1b: Anini and Kalihiwai Road 6-inch Main

The WP proposed to continue supply of the Anini Water System from the private Princeville Water System. Project Ani-1b would involve a second interconnection with the Princeville WS at Kalihiwai Road (west side of Kalihiwai River) which would provide greater system security and fire flow capacity. The proposed project will replace the four aforementioned WP projects, except the portion of WKK-6 along Kuhio Highway from Kalihiwai Road to Kalihiholo Road, and will eliminate the need for the portion of WKK-4 through the undeveloped easement.

The proposed project is consistent with the Water Plan 2020 because it will address most of the needs described in the WP to be addressed by the four CRPL projects. Furthermore, by eliminating the dependence of the Anini Water System on another water supplier, the proposed project will strengthen the reliability of the water service and the financial security of operation, which were identified as goals of the WP.

3.5 North Shore Development Plan

The North Shore Development Plan is a comprehensive community development plan focused on an area ranging from the Na Pali coast through Kilauea within the north shore of Kauai. The plan provides recommendations on a wide range of characteristics, including land use and zoning. It was developed in 1980 and its vision is not associated with a time frame. The proposed project is consistent with goals and objectives described in the North Shore Development Plan.

3.6 Kauai County Zoning

The County of Kauai Comprehensive Zoning Ordinance provides regulations and standards for land development and construction of buildings and other structures. It establishes several land districts and defines the types of development and uses that are permitted within the respective districts. These regulations are intended to “promote development which is compatible with Kauai’s scenic beauty and environment and to preclude inadequate, harmful or disruptive conditions that may prove detrimental to the social and economic well-being of the residents of Kauai”.

The majority of the project area is not associated with any zoning category. The developed area along Anini Road is zoned Open (O), and the section along Kuhio Highway is zoned Limited Industrial (IL) or Agricultural (A). See **Figure 3-4**.

3.7 Coastal Zone Management Program

Hawaii’s Coastal Zone Management (CZM) Program was approved in 1977 through HRS Chapter 205A subsequent to the passage of the Federal CZM Act in 1972. The program was enacted to provide a common focus for State and County actions dealing with land and water uses and activities. It is administered by the DBEDT, Office of Planning; however, each County has been delegated local authority and is responsible for issuing permits for activities within its lands. The two permits associated with the CZM relevant to this project are the Special Management Area (SMA) and Shoreline Setback.

3.7.1 Special Management Area

The SMA is a land area extending inland from the shoreline as delineated by the maps developed through the CZM program in which development is regulated. Permit requirement is determined by the County of Kauai, Planning Department.

As shown in **Figure 3-5**, the greater part of the project area is within the SMA. According to the “Special Management Area, Rules and Regulations of the County of Kauai,” only actions considered a development are subject to a SMA permit. Section 2.H.2.13. states that “Development” does not include “Installation of underground utility lines and appurtenant aboveground fixtures less than four feet in height along existing corridors.” Since the proposed waterline will conform to this definition, it is anticipated that the project will be exempt from an SMA permit.

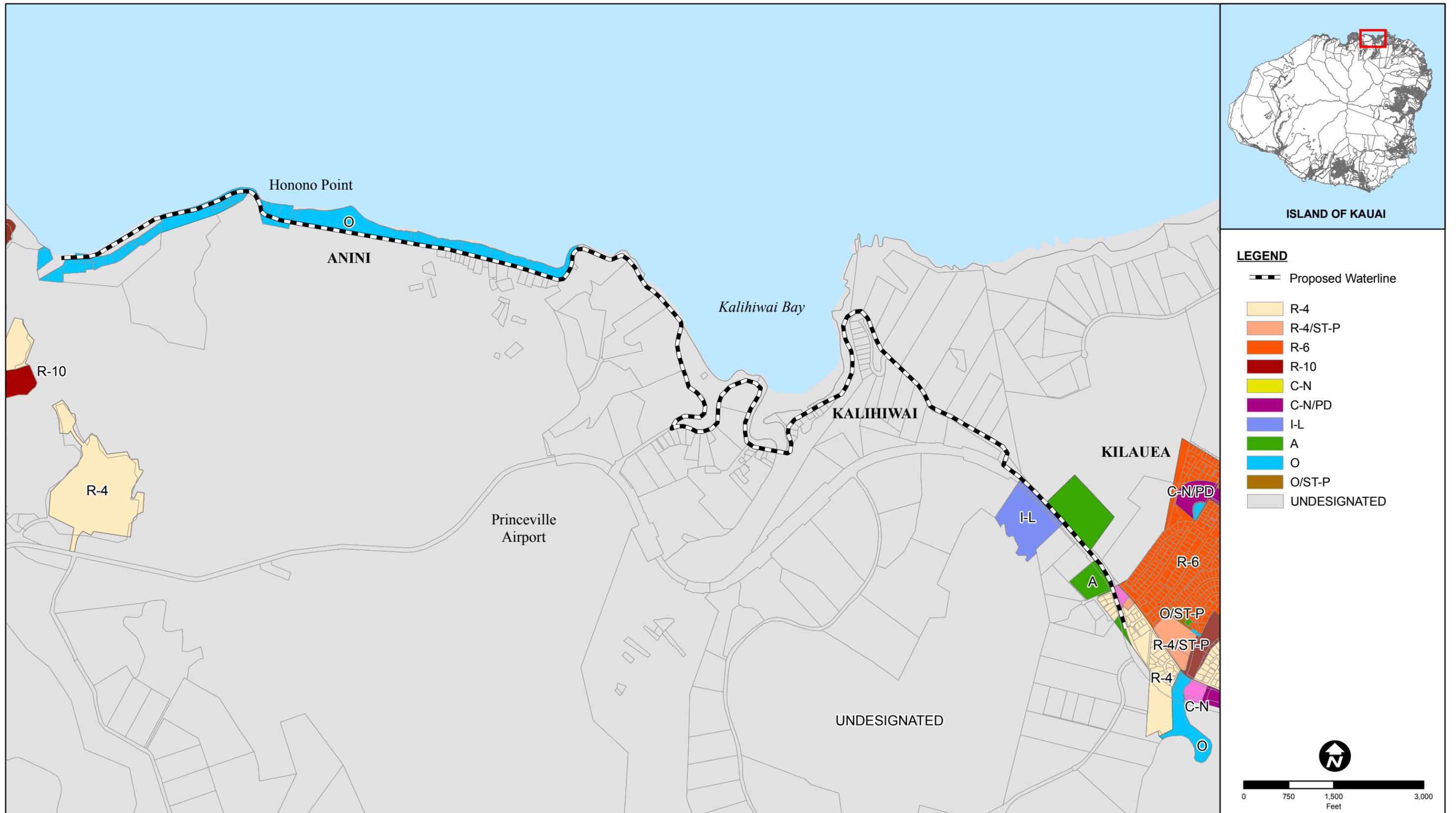
3.7.2 Shoreline Setback

County of Kauai Ordinance 863, adopted in 2008, sets forth processes and procedures for establishing building setbacks from the shoreline and regulatory standards to manage certain activities within close proximity to the shoreline. Administration of the Ordinance is under the jurisdiction of the County of Kauai, Planning Department. Generally, lands that are abutting the shoreline or within 500 feet of the shoreline and affected by coastal hazards are within the shoreline setback; however, applicability will be determined by the Planning Department.



DRAFT ENVIRONMENTAL ASSESSMENT - Pipeline Replacement from Kilauea to Anini

FIGURE 3-3: Water Plan 2020 Projects





If a project is within the shoreline setback, subsequent determinations will be made by the Planning Department whether a certified shoreline survey is required and whether the structure or activity is permitted or prohibited. If prohibited, the applicant will be required to apply for a variance to the Ordinance, which will be processed by the Planning Department.

The section of the project area along Anini Road is either abutting the shoreline or within 500 feet of the shoreline and within the flood and tsunami inundation zone; therefore, Ordinance 863 will likely be applicable. However, the language in the Ordinance is subject to interpretation, and it cannot be stated at this time whether the proposed project is a permitted or prohibited activity. A certified shoreline survey and variance could potentially be required for the proposed project.

3.8 Department of the Army

The mission of the Army Corps of Engineers (COE) is to protect the aquatic resources of the United States. The COE has jurisdiction over waters of the United States, which include navigable waters and wetlands, and assumes authority through issuance of permits for activities above, below or within these waters. The COE is responsible for administration of Department of the Army (DA) permits under the following legislative acts:

- Rivers and Harbors Act 1899§10: Section 10 of the Rivers and Harbors Act of 1899 requires prior authorization to complete any work in or over, or which affects the course, location, condition or capacity of navigable waters of the United States.
- Clean Water Act – §401 and §404: Section 401 of the Clean Water Act requires that an applicant for a Federal license or permit to conduct any activity which may result in a discharge into the navigable waters, shall provide certification that any such discharge will comply with the Clean Water Act. Section 404 of the Clean Water Act requires approval prior to discharging dredged or fill material into the waters of the United States.
- Coastal Zone Management Act – §307: Section 307 of the Coastal Zone Management Act of 1972, as amended (16 U.S.C. 1458(c)), requires the applicant and State certify that the project is in compliance with an approved State Coastal Zone Management Program.
- Endangered Species Act – §7: Section 7 of the Endangered Species Act of 1973 requires certainty that any Federally funded or authorized action will likely not jeopardize the continued existence of any endangered or threatened species, or result in the destruction or adverse modification of their critical habitat. The Corps consults with the United States Fish and Wildlife Service (USFWS) and/or NOAA Fisheries to assess the potential of a project to affect listed species.
- National Historic Preservation Act – §106: Section 106 of the National Historic Preservation Act requires the Corps to take into account the effect of a project on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The Corps is required to consult with the DLNR, State Historic Preservation District (SHPD), in order to determine a project's potential to impact resources of historic or cultural significance.

The COE completed a Jurisdictional Determination for the proposed project, and in a letter dated February 15, 2011, indicated that Kalihiwai Stream is subject to COE jurisdiction and concluded the following:

- DA permit will be required under Section 10 because the work will be completed under a navigable water of the U.S. (Kalihiwai River)
- DA permit will be required under Section 404 should the project activity result in discharge of fill material into a water of the U.S. (Kalihiwai River)

Permit requirements will be coordinated further with COE when specific details of the Kalihiwai River crossing have been developed.

3.9 Federal Cross-Cutter Authorities

This project may be funded in part or in whole by Federal funds through the State of Hawaii's Drinking Water State Revolving Fund (DWSRF) program, which would constitute a Federal action and will require the project to meet all Hawaii DWSRF program requirements. The U.S. Congress established the DWSRF program as a new Section 1452 of the Safe Drinking Water Act (SDWA), 33 U.S.C. 300j-12, by the SDWA Amendments of 1996, Public Law 104-182. The intent of the DWSRF is to assist water systems in constructing the infrastructure needed to maintain or improve compliance with the SDWA.

3.9.1 Archaeological & Historic Preservation Act, National Historic Preservation Act

As discussed in Section 2.12, the project will be located entirely within State and County ROW's which have already been disturbed. It is anticipated that the project will have no effect on historic properties and thus the proposed project will be in compliance with these regulations. State Historic Preservation District was consulted by letter on March 9, 2011 and April 4, 2011 and their response is pending.

3.9.2 Clean Air Act

The DOH Air Quality program is defined by HAR Chapter 11-60 and is a State Implementation Plan approved by EPA. As discussed in Section 2.10, there are very few existing sources of air pollution within the project vicinity, and project impacts will be minimal. Therefore, the project is in compliance with the DOH Air Quality program and hence also the Clean Air Act. The DOH, Clean Air Branch, will be provided a copy of this Draft Environmental Assessment for their concurrence.

3.9.3 Coastal Zone Management Act

As discussed in Section 3.7, HRS Chapter 205A sets forth Hawaii's CZM Program, which is in compliance with the Coastal Zone Management Act, 16 U.S.C. 1456(c)(1). HRS §205A-2 describes the CZM program, its objectives, and policies. The proposed project is consistent with

these objectives and policies. The DBEDT, Office of Planning, will be provided a copy of this Draft Environmental Assessment for their concurrence.

As discussed in Sections 3.7.1 and 3.7.2, the proposed project will be within the SMA and Shoreline Setback, and the permit requirements are being reviewed by County of Kauai, Planning Department.

3.9.4 Endangered Species Act, Fish & Wildlife Coordination Act, Essential Fish Habitat

The Endangered Species Act is administered by the United States Fish & Wildlife Service and the NOAA, National Marine Fisheries Service. The USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NOAA are mainly marine wildlife. NOAA is also the agency consulted under the Essential Fish Habitat consultation process under the Magnuson-Stevens Fishery Conservation and Management Act. The Fish and Wildlife Coordination Act (FWCA) provides the basic authority for USFWS involvement in evaluating impacts of proposed water resource development projects on fish and wildlife, and requires Federal agencies to take actions to prevent loss or damage to wildlife resources, or to employ mitigative measures.

As discussed in Section 2.6, USFWS was consulted to identify species within the project area, and responded by letter May 17, 2011. As requested in the letter, several mitigative measures will be employed to prevent loss or damage to the endangered avian species identified.

During the Department of the Army permit process for the Kalihiwai River crossing, COE will consult with the USFWS and NOAA, at which time it is expected that the project's compliance with the listed Acts will be assessed, and specific mitigative measures will be recommended. Crossing of the Kalihiwai River will be completed well below the streambed, and entry/exit pits will be located away from the stream and well above water level; therefore, effects on marine species and habitat are not anticipated.

3.9.5 Environmental Justice Executive Order

Signed in 1994, Executive Order 12898 directs federal agencies to identify and address disproportionately high adverse human health or environmental effects of its activities on minority and low-income populations. The percentage of minorities in the project area as indicated in Section 2.13 is generally higher than the national average of 27.6 percent; however, the 2000 median household income was generally higher than the 2000 national average of \$41,994. There will not be negative long or short-term health impacts associated with this project; rather, positive impacts will be realized through increased water system reliability and fire protection capabilities.

3.9.6 Farmland Protection Policy Act

The Agriculture and Food Act (Public Law 97-98) was passed in 1981 and contained the Farmland Protection Policy Act (FPPA), Subtitle I of Title XV, Section 1539-1549. The intent

of the FPPA was to minimize the impacts of Federal programs on prime farmland, unique farmland, and other land of statewide or local importance. It is administered by the USDA, National Resources Conservation Service. The three categories of farmland described in FPPA are translated to the DOA, ALISH classifications of “Prime”, “Unique”, and “Other” agricultural lands. As discussed in Section 2.3.3, the project will be located entirely within existing State and County ROW’s and is not anticipated to impact adjacent properties. NRCS will be provided a copy of this Draft Environmental Assessment for their concurrence.

3.9.7 Floodplain Management Executive Order

The objective of Executive Order 11988 is to avoid to the extent possible the adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. To accomplish this objective, "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by flood plains in carrying out its responsibilities."

As discussed in Section 2.4, according to the FIRM maps, much of the project area is within zone VE, which is within the 100-year coastal floodplains with additional hazards associated with storm waves. Installation of the waterline underground is not expected to have any effect on the floodplain. Should the waterline be installed above ground crossing bridges and culverts, structural considerations will be employed to protect the waterline in the unlikely event of a flood. The proposed project will not adversely impact the floodplain and therefore is in compliance with the Order.

3.9.8 Protection of Wetlands Executive Order

The purpose of Executive Order 11990 is to "minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands". To meet these objectives, Federal agencies, in planning their actions, are required to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided. The procedures require the determination of whether or not the proposed project will be in or will affect wetlands.

The section crossing Kalihiwai River is the only potential wetland within the project area. See **Figure 3-6**. As discussed in Sections 1.4 and 2.8, short-term impacts during construction will be minimal, because the waterline will be beneath the streambed using HDD technology, and several BMP’s will be employed to prevent contain potential pollutants. The Army Corps of Engineers is expected to assess compliance with this Order during the permitting process.

3.9.9 Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was established to protect the quality of all waters actually or potentially designed for drinking use from both above-ground and underground sources.



DRAFT ENVIRONMENTAL ASSESSMENT - Pipeline Replacement from Kilauea to Anini

FIGURE 3-6: Wetlands Map

The SDWA authorizes EPA to establish minimum standards to protect tap water with which all owners or operators of public water systems must comply; to oversee the agencies which can be approved to implement these rules for EPA, such as State governments; and to encourage attainment of secondary standards (nuisance-related). The proposed waterline will be tested in accordance with State and Federal standards for drinking water prior to being connected to the existing water system.

The SDWA also establishes the Sole Source Aquifer Program, under which EPA also may evaluate Federal-funded projects to determine whether they have the potential to contaminate a sole source aquifer. At present, there are two such aquifers in the State of Hawaii: the Southern Oahu Basal Aquifer, and the Molokai Aquifer. The project area is not within either aquifer and therefore does not require EPA review.

3.9.10 Wild & Scenic Rivers Act

The Wild and Scenic Rivers Act, 16 U.S.C. 1271-1287, declares to be the policy of the United States that certain selected rivers with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historical, cultural, or other similar values, shall be preserved in their free-flowing condition. There are no such rivers designated in the State of Hawaii, hence the project is in conformance with this Act.

CHAPTER 4. ALTERNATIVES CONSIDERED

4.1 No Action

Under the No Action alternative, existing waterlines would not be rehabilitated nor replaced, and existing supply and transmission conditions would remain the same. Existing waterlines would continue to deteriorate, leading to more frequent breakages and leaks, especially in the older waterlines along Kalihiwai Road. In addition to inconvenience to the users from disrupted service, this would result in an increase in operation and maintenance costs borne by DOW due to loss of water and repair requirements. There would also be an opportunity cost associated with continuing to buy water from other purveyors to supply the Anini Road and Kalihiwai Valley Road areas. Moreover, residents would continue to be at risk due to the lack of adequate fire protection from the undersized waterlines. For these reasons, No Action is not considered a feasible alternative.

4.2 Kuhio Highway Alignment

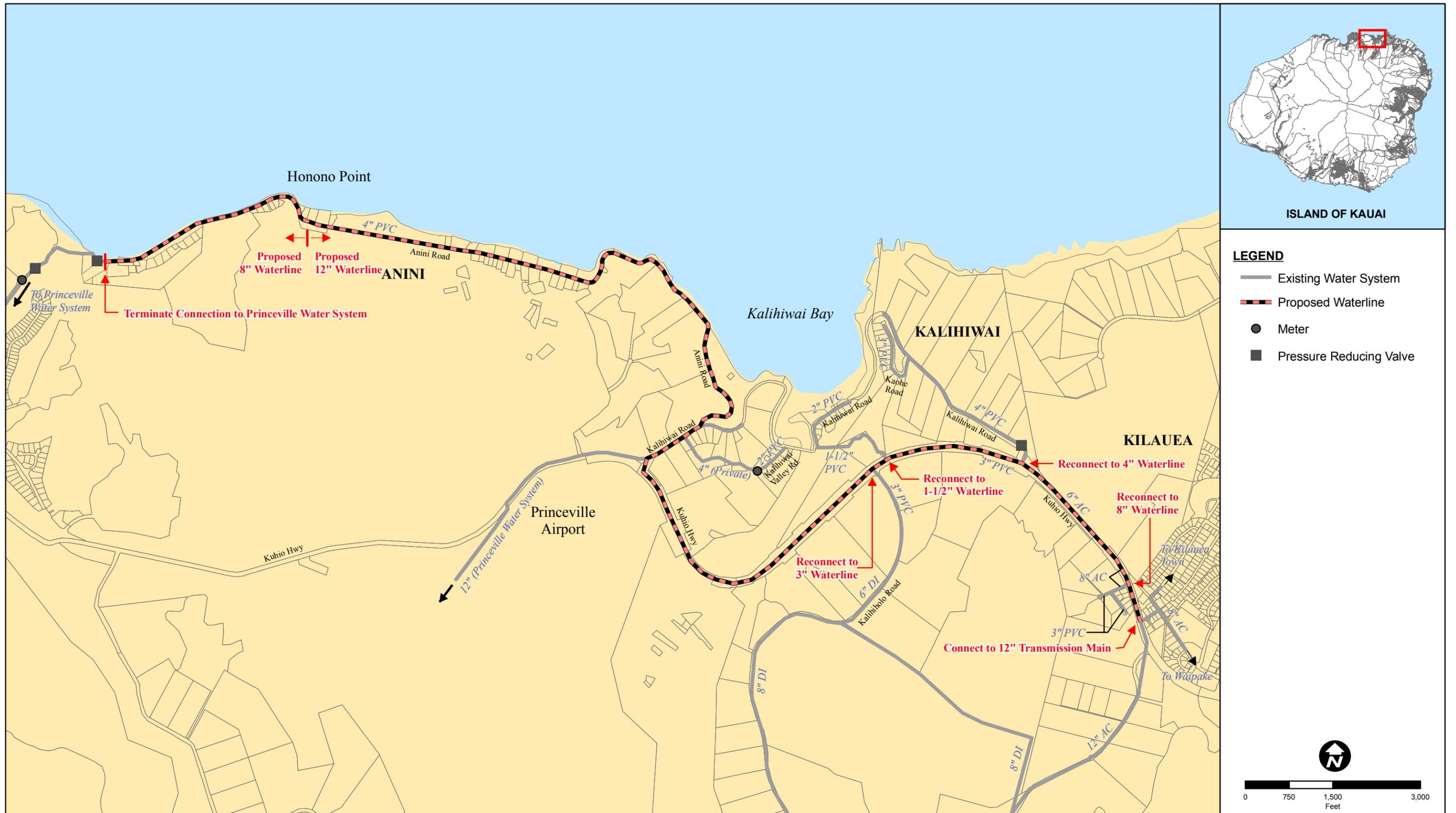
During preliminary planning of this project, DOW considered an alternate alignment to supply water from the Kilauea-Waipake-Kalihiwai Water System to the Anini Road area. The alternate alignment was the same as the selected proposed alignment, but included a waterline along Kuhio Highway between the two intersections with Kalihiwai Road and along Kalihiwai Road from Kuhio Highway to Anini Road rather than along Kalihiwai Road and crossing Kalihiwai River. See **Figure 4-1**.

Although the Kuhio Highway alignment would be marginally shorter and hydraulically better than the proposed alignment, there would be several issues. This alternative would add approximately 1.6 miles to the section within the Kuhio Highway ROW, which would increase traffic disruption and require extensive coordination with DOT, Highways Division. The Kuhio Highway Bridge over Kalihiwai River spans a significant distance and would necessitate structural design to secure the waterline to the bridge. This section of waterline would also be exposed to greater risk of failure being above ground, and access would be difficult in the event of necessary repairs. Furthermore, the bridge follows a horizontal curve with limited sight distances, which could potentially be dangerous to workers and motorists during installation.

This alternative also would not address the deficiencies in the waterline along Kalihiwai Road along the east side of Kalihiwai River nor the water supply issues to the residents along Kalihiwai Valley Road. As described in Section 3.4, Water Plan 2020 Project WKK-4 rectifies the deficiencies along Kalihiwai Road adjacent the east side of the river, but includes a costly section of waterline through an undeveloped easement. The selected proposed alignment eliminates the need for WKK-4; however, the Kuhio Highway alignment does not.

For these reasons, the Kuhio Highway alternative alignment was eliminated from consideration.

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DRAFT ENVIRONMENTAL ASSESSMENT - Pipeline Replacement from Kilauea to Anini

FIGURE 4-1: Kuhio Highway Alternative Alignment

CHAPTER 5. DETERMINATION

In accordance with Hawaii Administrative Rules §11-200-12, the potential effects of the proposed project are evaluated for the significance criteria which are summarized as follows:

1. *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource:* The proposed project will not cause a loss to or destruction of any natural or cultural resource as discussed in Sections 2.12 and 3.9.1.
2. *Curtails the range of beneficial uses of the environment:* The proposed project will be installed entirely within existing roadway Right-of-Ways and will not negatively affect the adjacent properties; therefore, the project will not curtail the beneficial uses of the environment.
3. *Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders:* The proposed project will be conform to Chapter 344, HRS. All permits and approvals in accordance with State and County rules and regulations will be obtained.
4. *Substantially affects the economic welfare, social welfare, and cultural practices of the community or State:* The proposed project is not anticipated to significantly affect the economic or social welfare, or cultural practices of the community or State.
5. *Substantially affects public health:* The proposed project will promote public health by providing more a reliable water transmission system and improved fire flow protection hence will not substantially affect public health.
6. *Involves substantial secondary impacts, such as population changes or effects on public facilities:* The proposed project will provide potential water service to a greater area than the existing water system; however, the potential for infill in the project area is limited and, therefore it is extremely unlikely to trigger population increase. Hence the proposed project is not anticipated to have any substantial secondary impacts.
7. *Involves a substantial degradation of environmental quality:* The proposed project is minor and will not degrade environmental quality.
8. *Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions:* The proposed project is not committed to other DOW projects, nor is it related to other activities in the area such that cumulative effects upon the environment are considerable.

9. *Substantially affects a rare, threatened, or endangered species, or its habitat:* The proposed project will not substantially affect a rare, threatened, or endangered species, or its habitat, as discussed in Section 2.6.
10. *Detrimentially affects air or water quality or ambient noise levels: The proposed project will not permanently affect air or water quality or ambient noise levels:* During construction, BMP's will be utilized to mitigate water quality impacts, and DOH regulations for community noise will be followed.
11. *Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters:* The proposed project is not likely to suffer damage from being in an environmentally sensitive area. The waterline will be installed nearly entirely underground within the floodplain and tsunami zone and will be structurally protected at above-ground culvert and bridge crossings. On slopes it will be installed under the paved roadway where feasible to protect against erosion.
12. *Substantially affects scenic vistas and viewplanes identified in county or state plans or studies:* The proposed project will be predominantly underground and will not affect scenic vistas and viewplanes.
13. *Requires substantial energy consumption:* Both construction and operation and maintenance of the proposed project will involve minimal energy consumption.

This Environmental Assessment has henceforth determined that the proposed project will not have significant adverse impacts on the environment, and therefore, an Environmental Impact Statement (EIS) is not warranted. It is anticipated that a Finding of No Significant Impact (FONSI) shall be issued.

CHAPTER 6. CONSULTED PARTIES

A pre-Environmental Assessment consultation letter was sent to various agencies and interested parties for the opportunity to provide preliminary comments prior to completing this Draft Environmental Assessment. The agencies and interested parties are listed below. Comments received are incorporated in Appendix A.

Agency or Interested Party	Pre-Con. Letter Sent	Response with comments	Response w/no comments	Draft EA Sent
Federal Agencies				
Department of the Army	x			x
U.S. Fish & Wildlife Service	x			x
U.S. Department of Agriculture, National Resources Conservation Service				x
State Agencies				
Department of Agriculture				x
Department of Business, Economic Development, and Tourism, Office of Planning	x			x
Department of Education	x			x
Department of Hawaiian Home Lands	x		x	x
Department of Health, Clean Air Branch				x
Department of Health, Clean Water Branch	x			x
Department of Health, Indoor and Radiological Health Branch				x
Department of Health, Safe Drinking Water Branch	x	x		x
Department of Health, Solid and Hazardous Waste Branch	x			x
Department of Land and Natural Resources, Land Division	x		x	x

Consulted Parties

Agency or Interested Party	Pre-Con. Letter Sent	Response with comments	Response w/no comments	Draft EA Sent
Department of Land and Natural Resources, Division of Aquatic Resources				
Department of Land and Natural Resources, Division of Boating and Ocean Recreation				
Department of Land and Natural Resources, Division of Forestry & Wildlife			x	
Department of Land and Natural Resources, Division of State Parks				
Department of Land and Natural Resources, Commission on Water Resource Management		x		
Department of Land and Natural Resources, Office of Conservation and Coastal Lands		x		
Department of Land and Natural Resources, Historic Preservation Division	x			x
Department of Transportation	x	x		x
Office of Hawaiian Affairs	x	x		x
County of Kauai Agencies				
Department of Parks and Recreation	x			x
Department of Public Works	x			x
Fire Department	x	x		x
Planning Department	x			x
Police Department	x			x
Transportation Agency	x			x
Utility Companies				
Hawaiian Telcom	x		x	
Kauai Island Utility Cooperative	x			x
Princeville Utilities Company, Inc.	x			x

Agency or Interested Party	Pre-Con. Letter Sent	Response with comments	Response w/no comments	Draft EA Sent
The Gas Company	x		x	

CHAPTER 7. REFERENCES

“2009 State of Hawaii Data Book,” prepared by State of Hawaii, Department of Business, Economic Development and Tourism.

County of Kauai, Comprehensive Zoning Ordinance

Hawaii Administrative Rules

Hawaii Revised Statutes

“Hawaii Stream Assessment: A Preliminary Appraisal of Hawaii’s Stream Resources, Report R84,” prepared for State of Hawaii, Commission on Water Resource Management; by National Park Service, Hawaii Cooperative Park Service Unit, December 1990.

“Kauai Economic Outlook Summary: Kauai Hit Hard by Recession,” prepared for County of Kauai; by University of Hawaii, Economic Research Organization, July 2009.

“Kauai General Plan,” prepared by County of Kauai, Planning Department.

“Noise Reference Manual, Kauai Edition,” prepared by State of Hawaii, Department of Health, Indoor and Radiological Health Branch, February 2008.

“North Shore Development Plan Update, Includes Kilauea,” prepared for County of Kauai, Planning Department; by Wilson Okamoto & Associates, Inc., December 1980.

“Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii,” United States Department of Agriculture, Soil Conservation Service, August 1972.

“Special Management Area, Rules and Regulations of the County of Kauai, (as amended)”

“State of Hawaii, Annual Summary, 2009, Air Quality Data,” prepared by State of Hawaii, Department of Health, September 2010.

U.S. Census Bureau

“Water Plan 2020,” prepared for County of Kauai, Department of Water; by R. W. Beck and CH2M Hill et al, March 2001.

“Water Resource Protection Plan,” prepared for State of Hawaii, Commission on Water Resource Management; by Wilson Okamoto Corporation, June 2008.

Yogi Kwong Engineers, LLC

APPENDIX A

Pre-Environmental Assessment Comments
and Responses

NEIL ABERCROMBIE
GOVERNOR
STATE OF HAWAII



ALBERT "ALAPAKI" NAHALE-A
CHAIRMAN
HAWAIIAN HOMES COMMISSION

ROBERT J. HALL
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

P.O. BOX 1879
HONOLULU, HAWAII 96805

March 21, 2011

Fukunaga and Associates, Inc.
Attn: Mr. Lance Fukumoto, Project Engineer
Suite 1530
1357 Kapiolani Blvd.
Honolulu, Hawaii 96814

Aloha Mr. Fukumoto:

Subject: Pre-Consultation Notice for Draft Environmental
Assessment Pipeline Replacement from Kilauea to
Anini, Kilauea-Kalihiwai-Anini Water System

Thank you for the opportunity to review the subject proposal.
The Department of Hawaiian Home Lands has no comment to offer
at this time. If you have any questions, please contact our
Planning Office at (808) 620-9480.

Me ke aloha

Albert "Alapaki" Nahale-a
Chairman
Hawaiian Homes Commission

cc: Aaron Zambo, P.E., Department of Water, County of Kauai

June 21, 2011

Mr. Albert "Alapaki" Nahale-a, Chairman
Department of Hawaiian Home Lands
State of Hawaii
91-5420 Kapolei Parkway
Kapolei, HI 96707

SUBJECT: Pre-Consultation for Draft Environmental Assessment
Pipeline Replacement from Kilauea to Anini,
Kilauea-Kalihiwai-Anini Water System

Dear Mr. Nahale-a,

Thank you for your letter dated March 21, 2011 in response to our request for pre-consultation for the preparation of the Draft Environmental Assessment for the subject project. You will be provided copies of the Draft EA when published for review and comment.

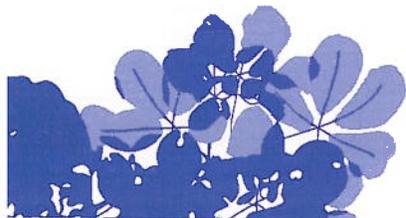
Please contact the undersigned at (808) 944-1821 if you have any questions or concerns.

Regards,



Lance Fukumoto, P.E.
Project Engineer

cc. Aaron Zambo, P.E., Department of Water, County of Kauai





STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:

March 23, 2011

Mr. Lance Fukumoto, P.E.
Fukanaga & Associates, Inc.
1357 Kapiolani Boulevard, Suite 1530
Honolulu, Hawaii 96814

Dear Mr. Fukumoto:

SUBJECT: PRECONSULTATION NOTICE FOR DRAFT ENVIRONMENTAL
ASSESSMENT FOR PIPELINE REPLACEMENT
FROM KILAUEA TO ANINI

We are in receipt of the above referenced document and offer the following comments:

This project is on the Hawaii Drinking Water State Revolving Fund (DWSRF) Priority List of Projects, which requires the following information to be included in the environmental assessment, if DWSRF funding is to be pursued by the Kauai Department of Water:

- a. A statement of project needs and benefits, including a discussion of the drinking water quality benefits of the project and/or the public health/water quality problems to be corrected.
- b. A description of the proposed project and the public water system of which it is a part of (PWS 402).
- c. An evaluation of the alternatives considered to address the project needs.
- d. A description of the selected alternative and the relevant design criteria used.
- e. Cost information on the estimated total capital costs and annual operation and maintenance costs for the project.

Mr. Lance Fukumoto
March 23, 2011
Page 2

- f. An evaluation of the impact of the project on the water supply (if applicable).
- g. Please include the following statement in the environmental assessment:

This project may be funded in part or in whole by federal funds through the state of Hawaii's Drinking Water State Revolving Fund (DWSRF) program, which would constitute a federal action and will require the project to meet all Hawaii DWSRF program requirements. The U.S. Congress established the DWSRF program as a new section 1452 of the Safe Drinking Water Act (SDWA), 33 U.S.C. 300j-12, by the SDWA Amendments of 1996, Public Law 104-182. The intent of the DWSRF is to assist water systems in constructing the infrastructure needed to maintain or improve compliance with the SDWA.

Please refer to the enclosed document for the specific criteria and cross-cutters in sections A, B, and C that are expected to be addressed in the environmental assessment.

If there are any questions, please call Alain Carey at 586-4258.

Sincerely,



JOANNA L. SETO, P.E, CHIEF
Safe Drinking Water Branch
Environmental Management Division

AC:slm

Enclosure

(Rev. Jul 25/07)

**SAFE DRINKING WATER BRANCH
HAWAII DEPARTMENT OF HEALTH**

**ENVIRONMENTAL ASSESSMENT
CHECKLIST AND CERTIFICATION**

PROJECT NAME: _____

PROJECT NUMBER: _____
(Applicant) (State)

=====

	YES	NO
--	-----	----

=====

ENVIR. ASSESSMENT SUBMITTED: ----- -----

PRIOR DECISION DOC'T SUBMITTED: ----- -----

A. OEQC CRITERIA ADDRESSED:

- | | | |
|-------------------------------|-------|-------|
| (1) ID of applicant: | ----- | ----- |
| (2) ID of approv agency: | ----- | ----- |
| (3) Agencies consulted: | ----- | ----- |
| (4) Descrip. of proj. char: | ----- | ----- |
| (5) Descrip. of envir: | ----- | ----- |
| (6) Impacts and alternatives: | ----- | ----- |
| (7) Mitigation measures: | ----- | ----- |
| (8) Determination: | ----- | ----- |
| (9) Findings and reasons: | ----- | ----- |

B. SERP CRITERIA ADDRESSED:

- | | | |
|------------------------------------|-------|-------|
| 1. Population projections current: | ----- | ----- |
| 2. "No-action" alternative: | ----- | ----- |

- 3. Impacts analysis addresses:
 - a. prim & sec impacts: -----
 - b. social parameters: -----
 - c. cumulative impacts: -----
 - d. other projects: -----
 - e. sensitive issues: -----

C. CROSS CUTTERS ADDRESSED:

- 1. Arch & Hist Pres Act: -----
- 2. Clean Air Act: -----
- 3. Coastal Zone Mang. Act: -----
- 4. Endangered Spec Act: -----
- 5. Environmental Justice Act: -----
- 6. Farmland Prot Act: -----
- 7. Fish & Wildlife Act: -----
- 8. Floodplain Mang EO: -----
- 9. Nat Hist Pres Act: -----
- 10. Prot of Wetlands EO -----
- 11. Safe Drink Water Act: -----
- 12. Wild & Scenic Rivers Act: -----
- 13. Essential Fish Habitat Act: -----

CERTIFICATION: (County certifies that it has conducted a current assessment of the environmental impacts of the proposed project, and has disclosed, in the Environmental Assessment Documents referred to in this checklist, all known significant environmental impacts of the proposed project.)

Signature Title Date

June 21, 2011

Ms. Joanna Seto, Chief
Safe Drinking Water Branch
Department of Health
State of Hawaii
919 Ala Moana Blvd., Room 308
Honolulu, HI 96814

SUBJECT: Pre-Consultation for Draft Environmental Assessment
Pipeline Replacement from Kilauea to Anini,
Kilauea-Kalihiwai-Anini Water System

Dear Ms. Seto,

Thank you for your letter dated March 23, 2011 in response to our request for pre-consultation for the preparation of the Draft Environmental Assessment for the subject project. Your comments have been addressed in the Draft EA. You will be provided copies of the Draft EA when published for review and comment.

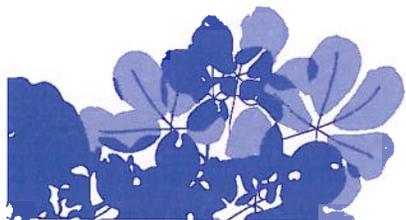
Please contact the undersigned at (808) 944-1821 if you have any questions or concerns.

Regards,



Lance Fukumoto, P.E.
Project Engineer

cc. Aaron Zambo, P.E., Department of Water, County of Kauai





STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 25, 2011

Fukunaga & Associates, Inc.
1537 Kapiolani Blvd Suite 1530
Honolulu, Hawaii 96814

Attention: Mr. Lance Fukumoto, P.E.

Ladies and Gentlemen:

Subject: Pre-Consultation Notice for Draft Environmental Assessment for Pipeline Replacement from Kilauea to Anini, Kilauea-Kalihiwai-Anini Water System

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR), Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comment.

Other than the comments from Division of Forestry & Wildlife, Office of Conservation & Coastal Lands, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0414. Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read "Russell Y. Tsuji".

for Russell Y. Tsuji
Administrator



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

RECEIVED
LAND DIVISION
2011 MAR 21 P 2:47
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

March 16, 2011

MEMORANDUM

TO: **DLNR Agencies:**
 Div. of Aquatic Resources
 Div. of Boating & Ocean Recreation
 Engineering Division
 Div. of Forestry & Wildlife
 Div. of State Parks
 Commission on Water Resource Management
 Office of Conservation & Coastal Lands
 Land Division –Oahu District
 Historic Preservation

FROM: Charlene Unoki, Assistant Administrator

SUBJECT: Pre-Consultation for Draft Environmental Assessment for Pipeline Replacement from Kilauea to Anini

LOCATION: Island of Kauai

APPLICANT: Fukunaga & Associates, Inc. on behalf of the County of Kauai Department of Water

Charlene

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by March 25, 2011.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: Randy Kenny
Date: 3-17-2011

KA-11-180



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

RECEIVED
CONSERVATION
LANDS
2011 MAR 16 11:49

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

March 16, 2011

MEMORANDUM

- TO: **DLNR Agencies:**
- Div. of Aquatic Resources
 - Div. of Boating & Ocean Recreation
 - Engineering Division
 - Div. of Forestry & Wildlife
 - Div. of State Parks
 - Commission on Water Resource Management
 - Office of Conservation & Coastal Lands
 - Land Division - Oahu District
 - Historic Preservation

RECEIVED
LAND DIVISION
2011 MAR 24 A 8:47
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

Charlene

FROM: Charlene Unoki, Assistant Administrator

SUBJECT: Pre-Consultation for Draft Environmental Assessment for Pipeline Replacement from Kilauea to Anini

LOCATION: Island of Kauai

APPLICANT: Fukunaga & Associates, Inc. on behalf of the County of Kauai Department of Water

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by March 25, 2011.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *[Signature]*

Date: 3.23.2011



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

REF:OCCL:TM

Correspondence: KA 11-182

MEMORANDUM

MAR 23 2011

To: Charlene Unoki, Assistant Administrator
Land Division

From: Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

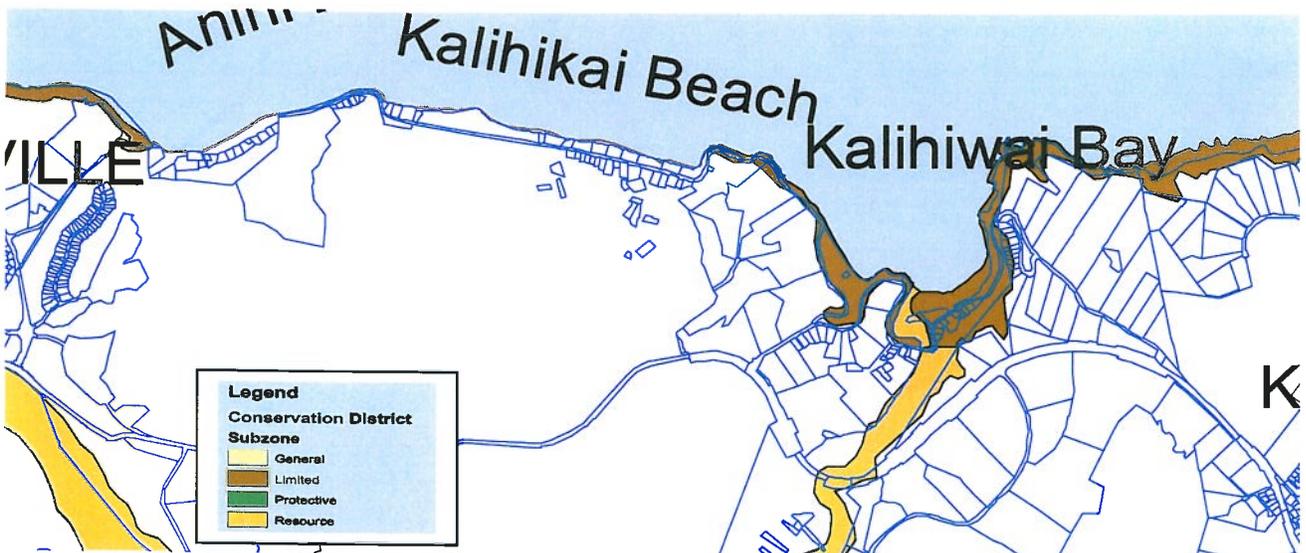
SUBJECT: Pre-consultation Notice for a Draft Environmental Assessment (EA) Regarding Waterline Replacement from Kilauea to Anini for the Kilauea-Kalihiwai-Anini Water System, Kauai, Various TMKs

The Office of Conservation and Coastal Lands (OCCL) has reviewed the subject correspondence dated March 9, 2011 and note that portions of Phase I appear to lie within the Conservation District Limited and Resource subzone as illustrated below. Proposed construction will be by standard open excavation trenching with horizontal drilling to cross Kalihiwai stream.

The proposed work is an identified land use pursuant to the Hawaii Administrative Rules (HAR) §13-5-22, P-6 Public Purpose Uses-Land uses undertaken by the counties to fulfill a mandated governmental service for public benefit and in accordance with public policy and the purpose of the conservation district. To approve, modify or deny this use is at the discretion of the Board of Land and Natural Resources therefore this land use would require a Board permit.

Portions within transportation right-of ways that lie within the Conservation District shall require approval by the relative transportation agencies whether state or county pursuant to HRS, §264-6.

Should you require further clarification in regards to this memorandum, contact Tiger Mills of our Office at (808) 587-0382.





STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 29, 2011

Fukunaga & Associates, Inc.
1537 Kapiolani Blvd Suite 1530
Honolulu, Hawaii 96814

Attention: Mr. Lance Fukumoto, P.E.

Ladies and Gentlemen:

Subject: Pre-Consultation Notice for Draft Environmental Assessment for Pipeline Replacement from Kilauea to Anini, Kilauea-Kalihiwai-Anini Water System

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR), Land Division distributed or made available a copy of your report pertaining to the subject matter to Commission on Water Resource Management for review and comment.

The Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0414. Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read "Charlene Unoki".

Charlene Unoki
Assistant Administrator



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 16, 2011

MEMORANDUM

TO: **DLNR Agencies:**
 Div. of Aquatic Resources
 Div. of Boating & Ocean Recreation
 Engineering Division
 Div. of Forestry & Wildlife
 Div. of State Parks
 Commission on Water Resource Management
 Office of Conservation & Coastal Lands
 Land Division - ~~Oahu~~ District
 Historic Preservation

FROM: Charlene Unoki, Assistant Administrator

SUBJECT: Pre-Consultation for Draft Environmental Assessment for Pipeline Replacement from Kilauea to Anini

LOCATION: Island of Kauai

APPLICANT: Fukunaga & Associates, Inc. on behalf of the County of Kauai Department of Water

2011 MAR 17 PM 5:04
COMMISSION ON WATER RESOURCE MANAGEMENT

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by March 25, 2011.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Permit required for any work in stream bed or bank.

Signed: PKChong
Date: 3/23/11

FILE ID:	RAJ.2010.2
DOC ID:	763V



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 31, 2011

Fukunaga & Associates, Inc.
1537 Kapiolani Blvd Suite 1530
Honolulu, Hawaii 96814

Attention: Mr. Lance Fukumoto, P.E.

Ladies and Gentlemen:

Subject: Pre-Consultation Notice for Draft Environmental Assessment for Pipeline Replacement from Kilauea to Anini, Kilauea-Kalihiwai-Anini Water System

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR), Land Division distributed or made available a copy of your report pertaining to the subject matter to Land Division-Kauai District Parks for their review and comment.

The Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0414. Thank you.

Sincerely,

A handwritten signature in blue ink that reads "Charlene Unoki".

Charlene Unoki
Assistant Administrator



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

RECEIVED
LAND DIVISION

2011 MAR 30 A 9:59

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

March 16, 2011

MEMORANDUM

TO:

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division - ^{Kauai} District
- Historic Preservation

Charlene

FROM:

Charlene Unoki, Assistant Administrator

SUBJECT:

Pre-Consultation for Draft Environmental Assessment for Pipeline Replacement from Kilauea to Anini

LOCATION: Island of Kauai

APPLICANT: Fukunaga & Associates, Inc. on behalf of the County of Kauai Department of Water

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by March 25, 2011.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- We have no objections.
- We have no comments. *at this time. Will wait for DEA*
- Comments are attached.

Signed: *[Signature]*

Date: *3/22/11*

June 21, 2011

Ms. Charlene Unoki, Assistant Administrator
Land Division
Department of Land and Natural Resources
State of Hawaii
1151 Punchbowl Street, Room 220
Honolulu, HI 96813

SUBJECT: Pre-Consultation for Draft Environmental Assessment
Pipeline Replacement from Kilauea to Anini,
Kilauea-Kalihiwai-Anini Water System

Dear Ms. Unoki,

Thank you for your letters dated March 25, 2011; March 25, 2011; and March 31, 2011 in response to our request for pre-consultation for the preparation of the Draft Environmental Assessment for the subject project. Your comments have been addressed in the Draft EA. You will be provided copies of the Draft EA when published for review and comment.

Please contact the undersigned at (808) 944-1821 if you have any questions or concerns.

Regards,



Lance Fukumoto, P.E.
Project Engineer

cc. Aaron Zambo, P.E., Department of Water, County of Kauai





STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD11/5593B

April 4, 2011

Lance Fukumoto, Project Engineer
Fukunaga and Associates, Inc.
1357 Kapi'olani Boulevard, Suite 1530
Honolulu, Hawai'i 96814

**Re: Pre-Draft Environmental Assessment Consultation
Kilauea-Kalihiwai-Anini Water System Construction
Island of Kaua'i**

Aloha e Lance Fukumoto,

The Office of Hawaiian Affairs (OHA) is in receipt of your March 9, 2011 letter with an enclosure requesting comments ahead of a draft environmental assessment (DEA) for the Kilauea-Kalihiwai-Anini Water System (system) proposed by the County of Kaua'i Department of Water Supply (DWS). The construction of an underground waterline using standard open excavation trenching (trenching) is proposed. The system will be completed in two phases (Figure 1) within existing County of Kaua'i and State of Hawai'i right of way (ROW). Phase I of the system will connect to an existing 12" waterline in Kilauea and extend it west, across the Kalihiwai Stream to the east end of Anini Road and a connection to an existing 4" waterline. Phase II will extend the waterline west along Anini Road. Upon completion of the system, potable water will be provided to DWS customers within the project area, which is currently served by a private system. The waterline will be sized to provide adequate fire protection to the service area.

The one exception to the open excavation trenching construction techniques will be where the waterline crosses Kalihiwai Stream. It is our understanding trenchless technology is being considered in this crossing location and we seek clarification whether a U.S. Army Corps of Engineers permit will be required. OHA seeks clarification whether existing DWS water sources will service the system. We would also like to see a discussion in the DEA on whether customers who will be serviced by this DWS system will pay lower prices than those they currently pay for service from the private system.

While we understand that the system will be constructed within existing ROW, we would like to see discussion within the DEA which details previous the degree of previous ground disturbance within the ROW and archaeological work within or in the immediate vicinity of the project area which has been reviewed and approved by the Department of Land and Natural

Resources-State Historic Preservation Division. OHA is concerned about the potential for encountering iwi kūpuna during ground altering activities and we question whether archaeological monitoring is proposed.

Thank you for initiating consultation and the opportunity to comment. We look forward to reviewing the DEA. Please send one hardcopy and one CD of the DEA to OHA attn: Compliance Monitoring Program when it becomes available. Should you have any questions, please contact Keola Lindsey at 594-0244 or keolal@oha.org.

‘O wau iho nō me ka ‘oia ‘i‘o,



Clyde W. Nāmu‘o
Chief Executive Officer

C: OHA- Kaua‘i Island COC

June 21, 2011

Mr. Clyde W. Namuo, Chief Executive Officer
Office of Hawaiian Affairs
711 Kapiolani Blvd., Ste. 500
Honolulu, HI 96813

SUBJECT: Pre-Consultation for Draft Environmental Assessment
Pipeline Replacement from Kilauea to Anini,
Kilauea-Kalihiwai-Anini Water System

Dear Mr. Namuo,

Thank you for your letter dated April 4, 2011 in response to our request for pre-consultation for the preparation of the Draft Environmental Assessment for the subject project. Your comments have been addressed in the Draft EA. You will be provided copies of the Draft EA when published for review and comment.

Please contact the undersigned at (808) 944-1821 if you have any questions or concerns.

Regards,



Lance Fukumoto, P.E.
Project Engineer

cc. Aaron Zambo, P.E., Department of Water, County of Kauai





STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

STP 8.0384

March 25, 2011

Mr. Lance Fukumoto, P.E.
Project Engineer
Fukunaga & Associates, Inc.
1357 Kapiolani Boulevard, Suite 1530
Honolulu, Hawaii 96814

Dear Mr. Fukumoto:

Subject: Pre-Consultation for Draft Environmental Assessment
Pipeline Replacement from Kilauea to Anini
Kilauea-Kalihiwai-Anini Water System

Thank you for providing notification of the subject project to the Department of Transportation (DOT).

Any project work that will be within, cross or adjoin the State's highway right-of-way of Kuhio Highway will need to be reviewed by and coordinated with the DOT Highways Division, including the Division's Kauai District Office. Early consultation with the highways staff is suggested.

Please provide your draft environmental assessment, including all project plans, directly to the DOT Highways Division with at least two (2) hard copy and CD (electronic copy) sets each to the Highways Planning Branch in Honolulu and the Kauai District Office in Lihue for the necessary staff reviews, comments and approvals.

The DOT appreciates your advance notification and for the opportunity to provide our initial comments. If you have any further questions, including a need to meet with Highway Division staff, please contact Mr. David Shimokawa of the DOT Statewide Transportation Planning Office at 831-7976.

Very truly yours,

A handwritten signature in black ink, appearing to read "Glenn M. Okimoto".

GLENN M. OKIMOTO, Ph.D.
Director of Transportation

c: Aaron Zambo, Department of Water, County of Kauai

June 21, 2011

Mr. Glenn Okimoto, Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, HI 96813

SUBJECT: Pre-Consultation for Draft Environmental Assessment
Pipeline Replacement from Kilauea to Anini,
Kilauea-Kalihiwai-Anini Water System

Dear Mr. Okimoto,

Thank you for your letter dated March 25, 2011 in response to our request for pre-consultation for the preparation of the Draft Environmental Assessment for the subject project. Your requested departments will be provided copies of the Draft EA when published for review and comment.

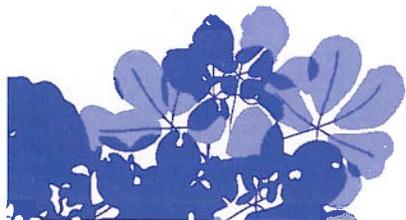
Please contact the undersigned at (808) 944-1821 if you have any questions or concerns.

Regards,



Lance Fukumoto, P.E.
Project Engineer

cc. Aaron Zambo, P.E., Department of Water, County of Kauai



THE GAS COMPANY

P.O. Box 3000
Honolulu, Hawaii 96802-3000
www.hawaiigas.com

April 1, 2011

Mr. Lance Fukumoto, P.E.
Fukunaga & Associates
1357 Kapiolani Blvd, Suite 1530
Honolulu, HI 96814

**Subject: Pipeline Replacement for Kilauea to Anini, Kilauea-Kalihiwai-Anini
Water System**

Dear Lance,

This is to confirm our previous telephone conversation informing you of our receipt of your letter dated March 9, 2011 for the subject project and that The Gas Company does not have underground pipelines in the roadway outlined in your drawing attached for Phase I and II.

If further questions arise, please do not hesitate to call me at 808-245-7957.

Very Truly Yours,



Glen H. Takenouchi

General Manager - Kauai

June 21, 2011

Mr. Glen H. Takenouchi
General Manager - Kauai
The Gas Company
3990 Rice Street
Lihue, HI 96766

SUBJECT: Pre-Consultation for Draft Environmental Assessment
Pipeline Replacement from Kilauea to Anini,
Kilauea-Kalihiwai-Anini Water System

Dear Mr. Takenouchi,

Thank you for your letter dated April 1, 2011 in response to our request for pre-consultation for the preparation of the Draft Environmental Assessment for the subject project. Because you indicated that your infrastructure will not be affected by this project, you will not be provided a copy of the Draft EA. However, the Draft EA will be available on the OEQC website if your review is necessary.

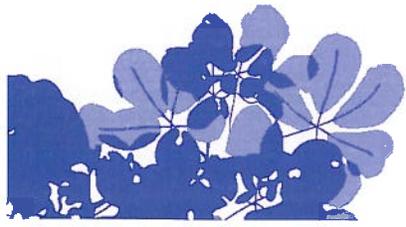
Please contact the undersigned at (808) 944-1821 if you have any questions or concerns.

Regards,



Lance Fukumoto, P.E.
Project Engineer

cc. Aaron Zambo, P.E., Department of Water, County of Kauai



June 21, 2011

Mr. Robert F. Westerman, Chief
Fire Department
County of Kauai
3083 Akahi Street, Suite 101
Lihue, HI 96766

SUBJECT: Pre-Consultation for Draft Environmental Assessment
Pipeline Replacement from Kilauea to Anini,
Kilauea-Kalihiwai-Anini Water System

Dear Mr. Westerman,

Thank you for your letter in response to our request for pre-consultation for the preparation of the Draft Environmental Assessment for the subject project. Your comments have been addressed in the Draft EA. You will be provided copies of the Draft EA when published for review and comment.

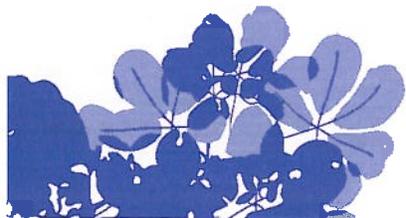
Please contact the undersigned at (808) 944-1821 if you have any questions or concerns.

Regards,



Lance Fukumoto, P.E.
Project Engineer

cc. Aaron Zambo, P.E., Department of Water, County of Kauai



Fukunaga & Associates, Inc.

From: Jimmy Sone [James.Sone@hawaiiantel.com]
Sent: Tuesday, March 15, 2011 5:48 PM
To: office@fukunagaengineers.com
Subject: Kilauea-Kalihiwai-Anini Water System Pipeline Replacement

Attn: Lance Fukumoto, P.E.

We received your pre-consultation notice for Draft Environmental Assessment Pipeline Replacement from Kilauea to Anini, Kilauea -Kalihiwai-Anini Water system.

Hawaiian Telcom facilities are aerial within the subject area and should not be affected by the subject project.

Call or email should you have any questions.

Thanks,
Jimmy Sone P.E.
Hawaiian Telcom
OSP Engineering - Kauai
808-241-5052
jimmy.sone@hawaiiantel.com

This message is for the designated recipient only and may contain privileged, proprietary, or otherwise p
If you have received it in error, please notify the sender immediately and delete the original. Any other u

June 21, 2011

Mr. Jimmy Sone
OSP Engineering - Kauai
Hawaiian Telcom
4040 Halau Street
Lihue, HI 96766

SUBJECT: Pre-Consultation for Draft Environmental Assessment
Pipeline Replacement from Kilauea to Anini,
Kilauea-Kalihiwai-Anini Water System

Dear Mr. Sone,

Thank you for your e-mail dated March 15, 2011 in response to our request for pre-consultation for the preparation of the Draft Environmental Assessment for the subject project. Because you indicated that your infrastructure will not be affected by this project, you will not be provided a copy of the Draft EA. However, the Draft EA will be available on the OEQC website if your review is necessary.

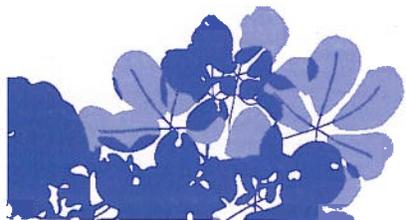
Please contact the undersigned at (808) 944-1821 if you have any questions or concerns.

Regards,



Lance Fukumoto, P.E.
Project Engineer

cc. Aaron Zambo, P.E., Department of Water, County of Kauai



APPENDIX B

Consultation During Draft Environmental
Assessment

NEIL ABERCROMBIE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
3060 Eiwa Street, Room 306
Lihue, Kauai, HI 96766

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

GUY H. KAULUKUKUI
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

May 18, 2011

Mr. Tom Tamahana
Fukunaga & Associates, Inc.
1357 Kapiolani Blvd., Suite 1530
Honolulu, HI. 96814

Dear Mr. Tamahana,

Pursuant to your request, we will provide you with information on threatened and endangered (ESA) terrestrial species that are known to the area. To obtain information on aquatic or marine species, please consult with the DLNR - Division of Aquatic Resources. For plant species, you may need to an on-site survey.

Water bird surveys of the Kahiliwai stream and estuary indicate the following ESA species recorded in the area are: Hawaiian moorhen or Alae ula (*Gallinula chloropus sandvicensis*), Hawaiian coot or Alae keo keo (*Fulica alai*), Hawaiian duck or Koloa moali (*Anas wyvilliana*), and Hawaiian stilt or Ae'ō (*Himantopus mexicanus*). We have no information on nesting activity or the location of nest site(s) for the above species. We have not observed nesting birds in the vicinity of the old bridge area where the proposed project is planned. We recommend a survey be conducted of the area during the environmental assessment period. It is recommended that another survey be made one week prior to the construction to ensure the project is given the green light to proceed.

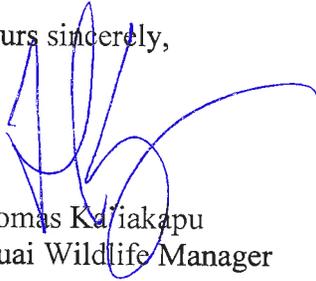
Other ESA species that are known to transverse over the area at night are: Newell's shearwater or A'ō (*Puffinus newelli*), Hawaiian petrel or Ua'u (*Pterodroma sanwicensis*) and candidate specie Band-rumped storm petrel (*Oceanodroma castro*). These species are known to nest in the interior mountain habitats and use the Kalihiwai valley and stream as a flyway. These species are also attracted to bright lights including street lights and stadium lights. It is well-documented that these nocturnal species have collided with tall man-made structures due to the light attraction problem. Therefore, we recommend that no ^{NIGHT} time work using construction lights be implemented. A common seabird species also known to the area is the Wedge-tailed shearwater or Ua'u kani (*Puffinus pacificus*) and is known to nest along the sea cliffs or pali near Kalihiwai valley and estuary. It is also prone to bright lights and the fallout problem.

If you foresee the need to conduct night time operations using construction lights, we recommend the lights be shielded so the light bulb is recessed and focused downward and not pointed upward toward the night sky. The fledging season of the above listed seabirds are during September 15 through December 15. This is the critical period where most of the seabird fallout occurs, therefore, avoid night time work using lights.

The Hawaiian bat (*Lasiurus cinereus semotus*) is known to transverse the area at night in search of food and their roosting area. Bats roost in native and non-native trees and tall shrubs throughout the island of Kauai. The birthing and pup rearing season is May 15 through August 15, therefore, we recommend no cutting or trimming of trees that are taller than 15 feet (4.6 meters). If you foresee that trees will need to be cut or removed during this period, we recommend consulting with a knowledgeable wildlife biologist to determine the status of bats in the area prior to the start of the project.

Thank you for the opportunity to provide comments. If you have any questions or concerns, please contact me at 808-274-3433. Mahalo.

Yours sincerely,



Thomas Ka'iakapu
Kauai Wildlife Manager

Encl.

Cc: Kauai DOFAW files

Tom Tamanaha

From: Tom Tamanaha [ttamanaha@fukunagaengineers.com]
Sent: Wednesday, April 06, 2011 3:02 PM
To: 'Thomas J. Kaiakapu (thomas.j.kaiakapu@hawaii.gov)'
Subject: Kalihiwai Stream and Estuary
Contacts: Thomas J. Kaiakapu

Thomas,

We are seeking information on inhabitants (both seasonal and normal) of the Kalihiwai Stream & estuary areas for inclusion in an environmental assessment report. We would appreciate obtaining names of fish, wildlife, and plants, including rare or endangered species, in this habitat. We also would like to know whether special care should be taken when seasonal wildlife are in the area during construction of a proposed waterline project. Most likely construction would not affect the waterway, since we plan to install a 12" pipeline across the river by means of micro-tunneling under the river bed. Attached is a tax map showing the waterline stream crossing location.

Also, if you have information regarding conformance to: 1) Endangered Species Act, 2) Fish & Wildlife Coordination Act, and 3) Essential Fish Habitat Consultation Process (under the Magnuson-Stevens Fishery Conservation & Management Act); we would greatly appreciate your input on this matter. Thank you for your assistance.

April 4, 2011

Ms. Pua Aiu, Administrator
State Historic Preservation Division
Department of Land and Natural Resources
State of Hawaii
601 Kamokila Blvd., Suite 555
Kapolei, HI 96707

SUBJECT: Request for Consultation for Draft Environmental Assessment
Pipeline Replacement from Kilauea to Anini,
Kilauea-Kalihiwai-Anini Water System

Dear Ms. Aiu,

On March 9, 2011, we sent you a letter informing you of the impending subject Draft Environmental Assessment and providing you the opportunity to provide preliminary comments. To date, we have not received any such comments. However, we would now like to formally request consultation from your Division for inclusion in the DEA. This project is on the Hawaii Drinking Water State Revolving Fund (DWSRF) Priority List of Projects, and as such, must include several Federal cross-cutters to be eligible for DWSRF funding. The Federal cross-cutters relevant to your Division are:

- Archaeological and Historic Preservation Act
- National Historic Preservation Act

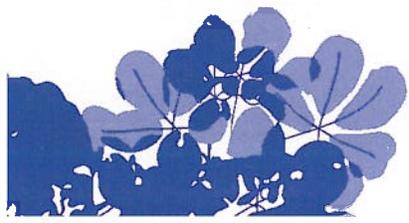
Please indicate whether the subject project is in conformance with these two Acts. According to the Hawaii and National Register of Historic Places on your website, there are no historic places in the project area. Furthermore, we note that the project will be constructed entirely within State and County roadway Right-of-Ways, which have already been disturbed.

We respectfully request comments be provided by April 25, 2011 for expeditious processing of the DEA. Please do not hesitate to contact our office if you have any questions or concerns.

Regards,



Lance Fukumoto, P.E.
Project Engineer





United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, Hawaii 96850

In Reply Refer To:
2011-SL-0259

MAY 17 2011

Mr. Tom Tamanaha
Project Engineer
Fukunaga and Associates, Inc.
1357 Kapiolani Boulevard, Suite 1530
Honolulu, Hawaii 96814

Subject: Species List for the Proposed Waterline Construction Project from Kilauea to Anini, Kauai

Dear Mr. Tamanaha:

We received your letter on March 14, 2011, requesting our assistance regarding the preparation of a Draft Environmental Assessment. The project footprint extends from Kilauea to Princeville on the island of Kauai. The proposed project includes the construction of an underground pipeline to provide potable water to lots along Anini Road and Kalihiwai Valley Road. The proposed waterline will be installed in two phases using standard open excavation trenching techniques except where the project corridor intersects the Kalihiwai River. There the project description calls for plans to horizontally drill beneath the river bed with a minimum clearance from the bottom of the stream of 20 feet, with drilling access points to be located at distances of 325 feet west of the river bank, and 125 feet east of the river bank respectively.

Based on information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Program, eight species protected by the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) may frequent the area.

- The endangered Hawaiian goose (*Branta sandvicensis*) has been observed in areas throughout the proposed project footprint. Hawaiian geese breed from November through April and may be in the vicinity of the proposed project.
- The endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) roosts in both exotic and native woody vegetation and, while foraging, leave their young unattended in "nursery" trees and shrubs. If trees or shrubs suitable for bat roosting are cleared during the pupping season, there is a risk that young bats could inadvertently be harmed or killed. As a result, woody plants greater than 15 feet (4.6 meters) tall should not be removed or trimmed from May 15 to August 15.

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- The federally endangered Hawaiian coot (*Fulica alai*), Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian duck (*Anas wyvilliana*), and Hawaiian moorhen (*Gallinula chloropus sandvicensis*) are known to occur in the vicinity of the Kalihiwai River. Current plans call for horizontal drilling to install the waterline beneath the river bed. However, riparian zones along the banks of the river where the drilling access points are proposed may be impacted by the construction activity.
- Seabirds, including the federally threatened Newell's shearwater (*Puffinus auricularis newelli*) and endangered Hawaiian petrel (*Pterodroma sandwichensis*), fly at night and are attracted to artificially lighted areas. We recommend conducting all work activities during daylight hours.

It is our recommendation that biological surveys be conducted to determine the status of all listed species within the project footprint. This may include listed species not identified from our databases. All pertinent biological information should be included in your Draft Environmental Assessment to assist us in understanding the scope of the project and potential impacts to listed species or sensitive habitats.

We hope this information assists you in the preparation of your Draft Environmental Assessment. If you have any questions, please contact Ian Bordenave, Fish and Wildlife Biologist, at (808) 792-9400 for further assistance.

Sincerely,



for Loyal Mehrhoff
Field Supervisor

Tom Tamanaha

From: Tom Tamanaha [ttamanaha@fukunagaengineers.com]
Sent: Friday, April 15, 2011 11:17 AM
To: 'Ian_Bordenave@fws.gov'
Subject: Proposed Kauai Waterline Project (vicinity of Kalihiwai Stream & Bay)
Contacts: Ian Bordenave

We are working on the design of a new waterline for the Kauai Department of Water in the Hanalei area of Kauai. The proposed 12" waterline would be aligned along Anini Road and cross the Kalihiwai Stream near the estuary of the stream as indicated on the attached map. We plan to micro-tunnel the waterline under the stream bed and not disturb the stream; however, we would need to prepare an environmental assessment (EA); and due to federal funds involvement, conform to the following Federal Acts:

- Endangered Species Act,
- Fish and Wildlife Coordination Act, and
- Essential Fish Habitat Consultation Process (under the Magnuson-Stevens Fishery Conservation and Management Act).

We would appreciate your assistance to enable our conformance to the above Acts. We are also seeking any resources or knowledge for the following information:

- Names of fish, wildlife, and plants inhabiting the stream and in its vicinity,
- Rare or endangered fish, wildlife, and plants in the stream and vicinity, and
- Seasonal or nesting periods that may be restrict or prohibit construction along the stream banks or in its vicinity.

Any other information that could be used in preparation of the EA, or related to conformance to Federal Acts or other applicable rules and regulation would be greatly appreciated. Thank you.

